

TO THE READER

KINDLY use this book very carefully. If the book is disfigured or marked or written on while in your possession the book will have to be replaced by a new copy or paid for. In case the book be a volume of set of which single volumes are not available the price of the whole set will be realized.



Library

6

Class No. 104

Book No. 089 S

Acc. No. 9230

Can 2008



JS

Science and the Moral Life

Other MENTOR Books You Will Enjoy

35 cents each

THE LIMITATIONS OF SCIENCE *by J. W. N. Sullivan*

The boundaries and potentialities of present-day scientific concepts, in layman's language. (#M35)

SCIENCE AND THE MODERN WORLD

by Alfred North Whitehead

A penetrating study of the influence of four centuries of scientific thought on world civilization. (#M28)

PHILOSOPHY IN A NEW KEY *by Susanne K. Langer*

A study of the symbolism of reason, rite and art, in clear, readable style. (#M25)

RECONSTRUCTION IN PHILOSOPHY *by John Dewey*

America's most highly regarded thinker outlines how his philosophy of experience can be integrated with contemporary life. (#M53)

HEREDITY, RACE AND SOCIETY (newly revised)

by L. C. Dunn and Th. Dobzhansky

A fascinating study of group differences; how they arise, the influences of heredity and environment, and the prospects of race improvement through eugenics. (#M74)

To OUR READERS

We welcome your comments about SIGNET or MENTOR books, as well as your suggestions for new reprints. If your dealer does not have the books you want, you may order them by mail, enclosing the list price plus 5c a copy to cover mailing costs. Send for a copy of our complete catalogue. The New American Library of World Literature, Inc., 501 Madison Avenue, New York 22.

~~1955
com-11, 2~~
**SCIENCE and the
MORAL LIFE**

Selected Writings by

MAX C. OTTO

Preface by Eduard C. Lindeman



A MENTOR BOOK

Published by THE NEW AMERICAN LIBRARY

that he confronts the deep-seated problem of morals in a scientific age with insight and with courage. He strikes no bargains with timid and conventional apologists. His thought is indigenous, not derivative, native, not engrafted, pure and not adulterated. To those who have not yet discovered Max Otto, I can promise a fruitful journey in the realms of pertinent reflection. To his old friends and that great host of his former students, I need only say that in this volume they will again find themselves sitting familiarly at the feet of a great and beloved teacher.

May, 1949

EDUARD C. LINDEMAN,
*Formerly Professor of Social Philosophy
at the New York School of Social Work,
Columbia University.*

Contents

<i>Preface by Eduard C. Lindeman</i>	v
<i>Introduction: PHILOSOPHY AND THE PUBLIC</i>	9
1. MAN	23
2. IDEALS AND CHARACTER	40
3. REALISTIC IDEALISM	54
4. THE ETHICAL NEUTRALITY OF SCIENCE	71
5. SCIENTIFIC METHOD AND THE GOOD LIFE	90
6. WITH ALL OUR LEARNING	110
7. THE HUNGER FOR COSMIC SUPPORT	127
8. AUTHORITARIANISM AND SUPERNATURALISM	141
9. SCIENTIFIC HUMANISM	153
10. SCIENCE AND THE HIGHER LIFE	171
<i>Conclusion:</i>	
SHALL WE QUIT, OR SEE IT THROUGH?	186

Introduction: Philosophy and the Public*

I

Of what good is philosophy anyway? That is the question frequently asked, and more often than not it is a purely rhetorical question, amounting to the assertion that philosophy is of no practical use. It is this question which we are to take seriously and try to answer.

Now, there is more to this question than is evident on the surface. The person who asks it implies something he does not say. It is not as though he were asking, "Why do you eat rich food when you are too fat already?" Or "Why do you sleep so late in the morning that you have to rush off without a decent breakfast?" Such questions can be answered by saying, "Very well, I'll stop doing it. I'll eat plainer food," or "I'll get up earlier." But suppose the questions were: "Why eat at all, since you only get hungry again?" or "Why sleep a part of your life away which heaven knows is short enough already?" These questions imply that it is possible to get on without eating or sleeping; and since the best anyone can do is to choose what to eat and how long to sleep, always eating something and always sleeping more or less, they are unreal questions in the sense that they are out of touch with the realities of experience. In this respect the question proposed as regards philosophy is identical with them. It, too, is an unreal question in that it implies a state of affairs that has no existence. The implication is that a person can have a philosophy or not as he pleases, whereas his having a philosophy is unavoidable. The best he can do is to have one kind or another.

Charles and Mary Beard have made this point excellently at the beginning of their book, *The American Spirit*:

Every person, whether primitive or highly civilized, has a conception of himself and the universe in which he lives and works or idles.

* From *Philosophy in American Education* by B. Blanchard, C. Ducasse, C. W. Hendel, A. E. Murphy and M. C. Otto. Copyright, 1945, by Harper and Brothers.

This is his idea of his world—his world-view. His world-view may be dimly formed, barely recognized, even somewhat surreptitiously held. But a world-view is in the mind of every man and every woman.

An individual may deny that he has a world-view. He may say that he has no interest in the world. He may insist that he is an independent, free-swinging person, hedonist or ascetic, choosing his own way of life at his own will; but the denial is itself a world-view—something on the basis of which independence is asserted, whether he is aware of it or not.

This representation by two of our foremost scholars is duplicated in principle by an outstanding leader of American business, Eric A. Johnston, addressing the graduating class at the University of Virginia. "Philosophy is something more," he told the graduates, "than a course in your school curriculum to be passed and forgotten. It is something each of us has, whether we know it or not. It is the aggregate of our enthusiasms and prejudices. It is the moral code by which we live. It is the equipment we bring to life and the responses we expect from life." And the space between scholar and businessman—quite a large space, at that—could easily be filled in by others who have spoken to the same effect, doctors, lawyers, journalists, and men prominent in politics.

Opinions such as these do not *demonstrate* that a degree and kind of philosophy is practically universal among men, but they do prove that well-qualified observers believe this to be the case. Anyone who questions what they say need only observe a little on his own account, examine himself, the people he knows or hears about and what he reads, and he will have plenty of evidence that one thing which everyone gains from living, whatever else he may win or lose, is a more or less elaborated theory of life, based upon an idea of human nature and the conditioning natural and social environment.

This widespread general philosophy is of course not invariably of a kind to take pride in. Constituted as it is of bits picked up for the most part accidentally, a belief here, an attitude there, it cannot easily be inwardly coherent or outwardly comprehensive. And it is likely to be vague, ambiguous, equivocal, just where clearness is most needed. Moreover, the chief motivating influence in its construction may be agreeable feeling rather than logic or fact. Yet, though piecemeal and fortuitous, it is the outgrowth of the human urge to make sense of things. It

mirrors the effort of individuals and communities to take life in charge and deliberately make the best of it. Untutored as this philosophy may be, it has one quality which professional philosophy often lacks: it is alive with the impulses and ambitions that keep men going. And it does a good deal, even if not so much as the critics may demand, to illuminate those native impulses and ambitions. In some cases, indeed, it rises to such loftiness of aspiration, is so critically intelligent, and so broad in its application, as to put professional idealists to shame.

Besides whatever this unstudied philosophy comes to, it is responsible for the choices millions of people make day in and day out, and hence it sets the tone of the human venture for most of us. Gerald Johnson, in an article that appeared in *Life* in 1942, "Whose War Aims?", made this pertinent suggestion: "The President may dictate until he is black in the face, but the terms are going to be enforced by the American people, or they will not be enforced at all." This is as true of life as it is of war aims. Men of letters, college professors, clergymen, and all others who feel it their duty to instruct may complain and dictate until they are black in the face, but it is the life aims put into practice by men and women at large which determine the character of the human venture.

II

Here, then, is the beginning of an answer to anyone who wants to know what philosophy is good for. We have interpreted the question to mean essentially, Why try to understand the conditions under which men exist or why aim to formulate a rational program of conduct? Why attempt to gain knowledge of the world and wisdom of life? And our answer has been something like this: We cannot help it. As human beings we seek information and employ it to meliorate and dignify our lot. Some acquaintance with the surrounding environment, some notion of the sensible thing to do in ordinary situations, even some judgment of relative values is bound to be acquired by everyone, the more so under contemporary conditions when a profusion of reading matter is spread before our eyes and radio broadcasts are everlastingly bombarding our ears. Although the knowledge and the abilities thus

gained may in many cases leave much to be desired, some persons are in this manner provided with a theory of life and a program of living, both of a high order of excellence.

Granting all this, is it philosophy? Surely most people would not think so. The word "philosophy" seems to them among the highbrowest of words. But the word "philosophy," like other words, denotes more than one kind of object. It does so even when lay philosophy is referred to, some lay philosophies, as already intimated, being superficial hand-to-mouth schemes of immediate advancement, while others are life plans broadly and generously conceived. And besides lay philosophy there is professional or technical philosophy, which also occurs in variations of depth and scope, all differing from lay philosophies in being the work of trained formulators of world and life views.

III

Suppose the broader conception is allowed to stand, are the two types, the nonprofessional and the professional, completely independent enterprises, or is the philosophy of philosophers the refinement of what is begun by the layman?

On this point there is no general agreement. And since an adequate discussion of the problem would take us away from the main task, let us tentatively accept the second alternative without argument and discover, if we can, how the non-professional philosophy may move in the direction of depth and breadth of insight, and may do so with the help of those for whom philosophy is a profession. /

One thing should scarcely need mentioning. The philosopher is expected to think with uncommon intensity and to reach out for the ultimate in wisdom. He is believed to follow up every clue that might possibly help in piecing together a picture of the world in totality, and to travel further and dig deeper than any other thinker in the search for the true criteria of value. This is an idealization, but it is more true than false. The philosopher does belong at the opposite pole from those who rest satisfied with superficial observation and short-range

ideals, or who practice the theory that ideas and emotions are self-justifying, so that everyone has a right to believe and feel as he likes, if only he believes and feels sincerely. A narrow, slipshod attitude toward fact and value, however well intentioned, is the very antithesis of the philosophic temper of mind.

Surely this determination to face things as they actually are—things singly and things collectively—is unusual. A businessman will think hard about business problems; a man of science will be keen in setting up and following through laboratory experiments; a military leader will do his best to figure out how to win victory over the enemy; but with respect to the larger issues of life, or even important sections of that life, businessmen, scientists, military leaders, and most of the rest of us tend to give up thinking altogether. We prefer to let someone else do the thinking for us. We do not choose to engage in that kind of mental effort.

Professional philosophers encourage us to make just that kind of mental effort. They want us to be educated persons—an educated person being, in Mildred McAfee's telling phrase, "one who thinks more than is necessary for survival." It is true, there is a species of philosopher who plants a tiny seed of doubt in some susceptible crevice of your mind and nurses it along until a blighting skepticism of life has spread over the whole of your thinking. And there is the kind who pretends to conjure the ultimate of reality from an item of personal experience. And of course there is the more common variety, the one who angles in the quiet waters of speculative meditation for abstract ideas which he can mount and proudly exhibit in disparagement of the wriggling, darting particulars whose habitat is the current of events. Nevertheless, taking them all together, philosophers are the most active and outreaching thinkers in the community. Philosophy at its best might adopt for its slogan the title of a book by Brian Penton, an Australian journalist: *Think—or Be Damned.*

IV

It is because the professional philosopher proposes to be intelligent in this rigorous and specific fashion, that any man or woman who goes to him in the hope of refining

his nonprofessional outlook, sharpening his ideas, enlarging the pattern of his thinking, and sending its roots deeper into reality, finds the improvement he desires. He may be disconcerted by the task proposed, may even be shocked by the renovation demanded in his views, but few who make the trial will be sorry for having undertaken it. They will recognize that they have become more mature than they were before, more critical of offhand beliefs, more concerned for the quality of the evidence on which opinions are based. William James, in the manuscript of a book left to be published after his death, offers some reasons why professional philosophy does this service. He wrote:

The principles of explanation that underlie all things without exception, the elements common to gods and men and animals and stones, the first *whence* and the last *whither* of the whole cosmic procession, the conditions of all knowing, and the most general rules of human action—these furnish the problems commonly deemed philosophic *par excellence*; and the philosopher is the man who finds the most to say about them.

One of the consequences is, as he also said, that the study of philosophy "rouses us from our native dogmatic slumber and breaks up our caked prejudices." And since this is one of its consequences, he expressed his faith in philosophy in these words:

To know the chief rival attitudes towards life, as the history of human thinking has developed them, and to have heard some of the reasons they can give for themselves, ought to be considered an essential part of liberal education. Philosophy, indeed, in one sense of the term is only a compendious name for the spirit in education which the word "college" stands for in America.

Since philosophers start with so much in common, one might expect a considerable unanimity among them as to first principles. This expectation is not realized. The typical philosopher is an intellectual lone wolf. It is his genius to envisage the sum of things with his own eyes and to refuse to depend on the eyes of another. He is at one with his colleagues in the intensity of his gaze, and in the field it embraces, though even this statement cannot be taken as literally true; but he glories in the employ-

ment of this intense and rangy vision to report a metaphysical landscape no other ever saw in just that perspective or in just that concatenation of shapes and colors.

Still, it is not impossible to classify philosophies on the basis of similarities in their interpretation of the world and their attitude toward fact and value. At least four interpretations or world views appear in the Platonic dialogues and no doubt could even when they were written summon tradition in their support. These four have persisted or have been revived again and again and are "living hypotheses" today.

There is the atomistic materialism of Democritus, one of the greatest thinkers of antiquity, whom Plato disdains to mention by name. In our own day this is the view usually ascribed to natural science.

There is the moral indifferentism of Thrasymachus, a philosophy of life which Plato endeavors to refute in the *human interest*. According to Thrasymachus, all the so-called virtues are disguised forms of self-seeking, and a realist will recognize them as such and not allow himself to be fooled. This conception is alive among us as the doctrine that might makes right.

As a third philosophy, there is the relativism of Protagoras, the *anthropos metron* doctrine: "Man is the measure of all things, of the existence of things that are, and of the nonexistence of things that are not." The contemporary form of this scheme of life is by some identified as pragmatism, which is looked upon as a social hybrid, the result of crossing three theoretical strains: biological evolution, business ambition, and America's reputed infatuation with size.

Finally, there is the immaterialistic philosophy of Plato himself, separated as by a continent from the other three. The spirit of it is detachment from nature in the usual meaning of that term, despair of humankind, and contempt for daily affairs. The philosopher's aim is contemplation of the supersensible, which assures him the best life attainable in this transitory earthly existence, and prepares his soul for its eternal abode in the world to come. For it is, after all, a city in heaven, not on earth, which is discussed at length in Plato's *Republic*. The re-

ply of Socrates to Plato's brother, Glaucon, when he said, "I do not believe that there is such an one anywhere on earth," sums up the ideal of the whole book:

In heaven, I replied, there is laid up a pattern of it, methinks, which he who desires may behold, and beholding, may set his own house in order. But whether such an one exists, or ever will exist, in fact, is no matter; for he will live after the manner of that city, having nothing to do with any other.

Moreover, nowhere else does Plato bring to bear his lavish poetic gifts and his powers of colorful imagery with the same abandon, deploy such psychological and logical resources, or speak with anything like the same intensity of feeling, as in the portrayal of the soul and its supernatural home. John of Patmos is no more exuberantly imaginative and far less graphically concrete in his *Revelation of the Heavenly Jerusalem* than Plato of Athens is in his vision of that other world from which all the ills and wrongs of this present life are banished, and change and imperfection are swallowed up in the eternally changeless and perfect.

The contemporary progeny of Platonism, as everyone knows, is a large one. Numerous church religions, most of them committed to the worthlessness of natural man; "new thought" movements variously compounded of myth and mysticism; classical humanism with its contempt of current biological psychology, its genteel condescension toward science, especially social science, and its super-emphasis upon "the Reason"; religious, social, and political projects that insist on the union of Christian dogma and democratic ideals as the sole foundation of civilization; and many other undertakings in religion, education, and politics, claim or acknowledge or have a more or less direct descent from Plato.

In the same manner post-Platonic philosophies are reducible to types growing out of their relation to Aristotle, the Stoics, or the Epicureans, to Thomas Aquinas, or to modern innovations from Descartes to the present, including those most strongly affected by experimental science, the theory of evolution, or recent revolutionary developments in mathematical physics.

It may be objected that, in spite of such simplification, the philosophic offering is still too bewildering to be of help to an amateur who wants to improve his nonprofessional outlook. Fortunately there are yet simpler listings. A typical example is one by Henry A. Wallace. That it is the work of a layman should be counted in its favor, since we want to discover what value acquaintance with professional philosophizing may have for ordinary life.

The following paragraph is from Wallace's little book, *The Century of the Common Man*:

There are three great philosophies in the world today. The first, based on the supremacy of might over right, says that war between nations is inevitable until such time as a single master race dominates the entire world and everyone is assigned his daily task by an arrogant, self-appointed *Fuehrer*. The second—Marxian philosophy—says that class warfare is inevitable until such time as the proletariat comes out on top, everywhere in the world, and can start building a society without classes. The third—which we in this country know as the democratic Christian philosophy—denies that man was made for war, whether it be war between nations or war between classes, and asserts boldly that ultimate peace is inevitable, that all men are brothers, and that God is their Father.

A casual reader of this summary of the great philosophic positions might possibly overlook a qualifying clause of importance. It is, says Wallace, "*we in this country*" who know the third as "the democratic Christian philosophy." But he has not left it at that. He makes his meanings so clear that even the casual reader should get it. "This democratic philosophy," he writes, "pervades not only the hearts and minds of those who live by the Christian religion, both Protestant and Catholic, but of those who draw their inspiration from Mohammedanism, Judaism, Hinduism, Confucianism, and other faiths." That is to say, democratic philosophy occurs in association with diverse religious creeds. It is present in any faith that preaches "the doctrine of the dignity of each individual human soul, the doctrine that God intended man to be a good neighbor to his fellow man, and the doctrine of the essential unity of the entire world . . ."

In the context of the present discussion the thing of chief significance about Wallace's classification is its basic assumption regarding the nature of philosophy. Philosophy is taken to be primarily an attitude toward life and only incidentally a cosmic theory. This is a telltale assumption. It places the classifier. It indicates that he is interested in *practical* as against *speculative* wisdom. While this is as it should be, since he is a layman, not a professional philosopher, it is well to make the point explicit. Possibly professional philosophy is intrinsically a search for speculative finality and only thereafter for wisdom in practical living. Should this actually be the aim of philosophy, laymen, I think, had better devote themselves to the improvement of lay philosophy and look for no help from philosophic experts.

Consider a typical statement by a most honored philosopher. "Speculative Philosophy," says Alfred North Whitehead, "is the endeavour to frame a coherent, logical, necessary system of general ideas in terms of which every element of our experience can be interpreted." He thinks this speculative knowledge important because by means of such a system of interpretation "everything of which we are conscious, as enjoyed, perceived, willed, or thought, shall have the character of a particular instance of the general scheme." Now doubtless such a "general scheme," when achieved, is an intellectual triumph of the first order, deserving to rank as a creative accomplishment with the supreme generalizations of science or the greatest works of art. And like these it cannot but bring rare satisfaction to the genius in whose mind it originally takes form. Moreover, it will have high value for all those who find these intellectual structures a source of mental stimulation or emotional refreshment.

But how about the general public? A "necessary system of general ideas" will have no significance for the men and women whose life aims must be realized through everyday commitments. However busy they may be with practical matters or however successful in making their way therein, most of them want something more life-filling than economic or social success, more mind-filling than knowledge of the world as they find it spread out

before their eyes; but it must be germane to what they are involved in doing and hence of a piece with the world in which they are busy.

Let us consider this matter more closely. Men are to go to professional philosophy for the broadening and deepening of the philosophy picked up in the process of living. If that purpose is to be fulfilled, such help must be forthcoming. Personally I firmly believe that it is forthcoming, but only if professional philosophy bears a certain relation to the obligations of life as plain men and women face them.

Philosophy of the type we have just evaluated does not measure up to this requirement. Its thinking is concentrated upon all-inclusiveness and finality. This objective is beyond human attainment. It is beyond the attainment of the masters in tested inquiry, the physical scientists, not to speak of investigators whose findings, by virtue of their less exacting method, must fall still further short. And this situation holds down the philosopher as it does all other thinkers. There is simply no way whereby a searcher can escape the relative nature of the true or the good or the beautiful of which he may catch sight.

And could a philosopher get around the disability which no other investigator can, plain men and women, who must keep their feet on the earth and their eyes on where they are going, would still have to make their way from the relatively worse to the relatively better. Consequently, a philosopher of absolutes cannot help them. And he, too, would become aware of this fact quickly enough were he less oblivious to the problems involved in the application of his speculative absolutes to the specific circumstances of practical experience.

Furthermore, there is the fact, which John Dewey has pointed out, that wisdom is not an intellectual term. It is a moral term. It does not denote profound, systematic knowledge of the ultimate pattern of things, but an active preference for the best ends and means of life. It is loyalty to the better values, to the goods which are satisfying in the light of reflection; and it implies active interest in bringing those goods into more general and secure enjoyment. So far as can be made out, the earth was not created with the happiness and dignity of mankind in view. We must attain both of them through struggle, in

part each one for himself and in part in co-operation one with another. The more successfully we hit upon the best way to go about this the more meaningful and joyous and touched with beauty our existence can be made. Technical philosophy will be useful to laymen in this emergency in proportion as it furthers the attainment of this moral wisdom.

VII

Is it possible for philosophy to meet these human specifications and yet measure up to scholarly standards? The answer depends upon whom you ask. My answer is a confident affirmative.

And what will professional philosophy so conceived do for the nonprofessional who makes its acquaintance? My answer is that it will do more for him than any other discipline can.

For one thing, it will work upon him in the same manner that intimate contact with mature philosophy of any kind does. It will break down the walls set up by habitual notions and feelings; will free him from the dominion of immediate appeals, from provincialism of ideas and narrowness of spirit, and thus aid in the emancipation of his mind. Superstitious credulity, dormant in almost all of us and active in the vast majority, will, so far as he is concerned, be recognized for what it is. Occult explanations, which still exercise enormous and harmful power over mankind, will lose the intellectual standing still so widely accorded to them wherever rational insight is weak. He will experience new interest in the value side of experience even as the whole process of evaluation is brought under critical scrutiny. Above all, he will gain in centrality of vision, in striking contrast with the mixture of confused and contradictory attitudes induced by the conflicting demands of present-day society.

VIII

To these benefits sure to result from contact with any responsible philosophy, others of a distinctive sort will accrue from the particular philosophy which we are advocating. For this philosophy has taken a distinctive task upon

itself and is therefore characterized by attributes which do not belong to the philosophic profession as such. It is from these unique attributes especially, that most help is to be gained by the men and women who must continue to do the work of the world. The novel feature of this philosophy is the closeness of its relationship with human affairs. It is an indigenous philosophy, whose ideals are the outgrowth of those affairs rather than exotic rarities sponsored by intellectuals whose ideals are those of the connoisseur.

Among the more essential of these distinctive attributes is the tying up of every meaning to a concrete object or a denotable doing or undergoing. People in everyday life have acted on this principle ever since they have reflected upon conduct. They have become more and more aware in the course of time that the real significance of thoughts and words is to be looked for in some tangible object or some actual deed or something observable going on. It is merely in relation to moral ideals, the "higher life," the "things of the spirit"—all believed to be confined to an area where the natural man's step is unsure—that most men have shown a willingness to accept the experience of emotional elevation, the sense of intellectual achievement, or even a feeling of relief from a burden of guilt, in lieu of an objective reference or an operational test.

The philosophy before us undertakes to move common-sense wisdom toward its full potential orbit. It teaches that not only in practical matters, but everywhere, no word has any other significance than the specific thing to which it points; that every thought, however subtle or fine-spun, and every ideal, however lofty, means the conduct or behavior it is fitted to produce, or the specific experience it is to eventuate in, if it means anything at all. Confucius, Socrates, Jesus, Galileo, Thomas Jefferson, Abraham Lincoln, John Stuart Mill, William James, John Dewey—these are some of the names on the roster of the great ones who have contributed to the advancement of this conception.

It will take time for this realistic idealism to become general. At the moment some leaders in formal education and organized religion are intensifying their opposition to its spread and we would be foolhardy to minimize their combined influence.

The human race, however, is growing up. Men the world round are becoming better and better acquainted with the actualities which condition their physical and economic lives. It is a fair surmise that they will likewise become better and better acquainted with the actualities which condition their aspirational lives. Progressive spirit-ed men and women are increasingly disposed to translate ideas and ideals into terms of conduct, into programs of action. They see through campaign oratory, religious magic, academic jargon, and other forms of hocus-pocus, to the worthy or unworthy aims behind these conscious or unconscious deceptions. They, too, have influence, and it is sure to grow. Men *can* reject the merely verbal and choose the concretely real even as idealists. They can learn to do it more generally. Something like this must happen —or the whole human undertaking on this planet will go down into an abyss of darkness and misery which so far has never overtaken more than a portion of mankind.

The deepest source of a man's philosophy, the one that shapes and nourishes it, is faith or lack of faith in mankind.

THE HUMAN ENTERPRISE

CHAPTER 1

Man*

I

The human drama is contingent upon physical nature and also upon human nature. We must become a little better acquainted with the hero of the play. Or is he the villain? Hero or villain, he is incredibly elusive. It is of him that Stephen Benét has written in *John Brown's Body*:

Swift runner, never captured or subdued,
Seven-branched elk beside the mountain stream,
That half a hundred hunters have pursued
But never matched their bullets with the dream.

How shall we go about it to get a fair report? Spectacular individuals are not hard to pick out, but a conclusion based upon these alone would be worthless. A too-limited survey can yield nothing of value, while an attempt at universality will end by mistaking a shadow for a solid object. Nor may we substitute an abstraction—"human nature"—for *human beings in their endlessly varied particularity*.

The business seems pretty nearly hopeless. How shall we bring under one category Confucius, the humanist; Buddha, the enlightened; and Jesus, the spiritually-minded? Is there a formula that will do justice to Socrates, Plato, Aristotle, Pericles, Alcibiades—each unmatched in mind and personality? Can the prophets of Israel be brought into one pattern with the worldly kings against whom they thundered? The Pharaohs of Egypt were man; so were the Emperors of Rome, the Genghis Khans, Alexanders, and Napoleons, the Popes of the Church, the

* From *The Human Enterprise* by Max C. Otto. Copyright, 1940, by Appleton-Century-Crofts, Inc.

Luthers, Calvins, and Wesleys. Florence Nightingale must have a place by the side of Cleopatra. There must be room for Savonarola and Benvenuto Cellini, for St. Francis of Assisi and Cesare Borgia, for Gladstone and Huxley, for Clemenceau and Woodrow Wilson. The list is endless, even of conspicuous personages.

And if we look in another direction as we must, and try to bring together into one representation the middle classes, the underprivileged struggling many, the derelicts of humanity drifting about in the backwaters of civilization, the underworld of criminals and outcasts and such bizarre worlds as Hollywood; if we remember Gertrude Stein's words, "I was then and ever since filled with the fact that there are so many millions always living and each one is his own self inside him"—that is, if we think of mankind, made up of individual human beings each following his own peculiar interests, each conditioned by his own peculiar talents and opportunities, we need not be told that a mathematically accurate description is unattainable.

It is not only because of their endless variety that men are baffling. Each individual is baffling. How explain the gorgeous versatility of Shakespeare or Bach? Who can elucidate Abraham Lincoln? What key will unlock the inner secret of Victoria Woodhull or Mary Baker Eddy? Is there a net to capture the volatile spirit of Lawrence of Arabia? True, we feel little embarrassment in passing judgment on less gifted men and women. But the fault, excusable enough, is in our obtuseness. The puzzle is there. Every biography is a post-mortem performed upon a body that is dead. The poet has asked the unanswerable question which each of us in his own way has asked himself:

You can weigh John Brown's body well enough,
But how and in what balance weigh John Brown?

No, we cannot hope to reach a final answer. Much of the story will remain untold. It must be enough if the more obvious traits of human personality and the more pronounced currents of human striving are made a little more unmistakable.

II

Man has speculated about himself, his origin, nature, and destiny, for at least four thousand years. Traces of such speculations are found in those early times, and there are hints that the problem was then already old in the culture of China, India, Crete, Babylonia, Egypt. Shocking characteristics were among the earliest to be discovered and published, and the fear has often been expressed that the human race would ultimately come to a bad end. The idea of salvaging the good in mankind by selecting a small minority of the best and rejecting the mass, has been advocated by men as far apart in time as King Gilgamesh and President Conant.

Today, cynicism about mankind has spread over a wider area and bitten deeper than before. It has spread beyond the borders of the literati and intelligentsia to the plain people upon whose healthy confidence in life we are dependent for ethical as for physical renewal. It has spread farther and bitten deeper still. It has found its way into the outlook of youth. This widespread cynicism, unrelieved as it is by any hope of an earthly Utopia or a heavenly City of God, has no parallel in history. P. S. Richards is correct when he declares that we have reached a pass where: "The question is no longer whether we can believe in God, but whether and in what sense we can believe in man."

The hopelessness about himself into which contemporary man has fallen is reinforced by the belief in his animal ancestry. This is accepted today as uncritically as the belief in his divine origin was accepted a few generations ago. Carl Sandburg speaks the mind of the age in his poem "Wilderness":

There is a wolf in me . . . fangs pointed for tearing gashes . . .
a red tongue for raw meat . . . and the hot lapping of blood—
I keep the wolf because the wilderness gave it to me and
the wilderness will not let it go.

There is a fox in me . . . a silver-grey fox . . . I sniff and guess . . .
I pick things out of the wind and air . . . I nose in the dark
night
and take sleepers and eat them and hide the feathers . . .
I circle
and loop and double-cross.

There is a baboon in me . . . clambering-clawed . . .
dog-faced . . .
yapping a galoot's hunger . . . hairy under the armpits.
. . . I keep the
baboon because the wilderness says so.

And not a wolf, a fox, and a baboon only, but a hog, a fish, an eagle, a mocking bird, and much besides:

O, I got a zoo, I got a menagerie, inside my ribs, under my bony head, under my red-valve heart: I am a pal of the world: I came from the wilderness.

The poem, even in the mutilated form here given, stirs something deep in the reader, something which he feels he is, or has been taught to believe he is, and this feeling or belief separates him intellectually from his grandfathers more profoundly than oceans separate peoples. Just now there is no alternative view. It is either special creation or biological evolution. Of these, the latter is far superior as a theory which harmonizes the known facts. We may hope that in time some ingenious thinker will hit upon a new interpretation, but until then the theory of evolution must be conceded to hold the ground.

Evolution must be accepted, but every evolutionist is not committed to the deductions which some evolutionists draw from evolutionary premises. Many such deductions are unfounded. Especially is this true of well-known portrayals of man. These are frequently poor likenesses. The claim is made, for example, that in virtue of man's animal inheritance, he is in essence identical with his next of kin among living creatures; and this being so, that the best solution for troublesome human problems is to be found in the study of analogous problems as they occur in their infrahuman form among the apes. A psychopathologist in California is reported to this effect: "Men and women have been trained by the demands of civilization to cover their natural impulses with many layers of disguises till it is very difficult to detect the real individual under the cloak." Now "monkeys are human beings without their masks on." Therefore "if we want to know how to behave, according to the way nature made us, if we want to know what is good for our instincts, we must study the monkeys." A colony of thirty monkeys in which he maintained enabled him to discover human in-

stincts in their natural form. From the study of the sex life of apes he claimed he was able to pick up useful clues to the natural sex needs of human beings, and to study the various forms of misery resulting from the conflict between the artificial limits imposed by civilized society and impulses natural to human beings as simians, which after all they are and can never cease to be.

III

This ingenious theory, which is interesting on its own account, is even more interesting as an illustration of how a widely accepted type of explanation affects the study of man. The genetic or historical method has accustomed us to the idea that we come closest to explaining a thing when we have discovered how it came to be. From this we have passed to the belief that *a thing's real nature is revealed in its primitive rather than in its developed form*. Early religions were the outgrowth of fear; religion is therefore a form of terror. The earliest moral codes were folkways which the members of a tribe were compelled to observe by those in power; consequently right is a name for might. The acts of a baby are purely egocentric; hence every human deed is self-centered. The simplest psychic behavior is the stimulus-response reflex; it follows that human personality is "an easily understandable integration of stimulus-response behavior." Turning from religion, morality, behavior, personality as these actually occur in their complexity and variety, we try to find them in what they were before they had become what they are. We pick away the petals to discover the rose. According to this method man is what he was, and the proper study of mankind is monkeys.

Any comparison between men and apes strikes many persons as indecent. They will have nothing to do with it. For some reason they find it necessary to believe, or pretend to believe, that human nature must be beautiful. But their position is precarious. The rigid separation long made between animal and human psychology cannot be maintained. Such books as Wolfgang Koehler's *The Mentality of Apes*, Robert Yerkes' *Almost Human*, Mr. and Mrs. Yerkes' *The Great Apes*, and allied studies, report investigations which cannot legitimately be neglect-

ed by one who seeks information on the nature of man. The more the scientific student of the anthropoid apes learns about them, as Mr. Yerkes testifies, "the more helpful lessons for mankind he discovers in their relations to their world and to one another." It is perhaps a natural solicitude for human dignity, though certainly a mistaken one, which disdains to study the animals next below us as a means of enlarging and deepening knowledge of mental processes, social relations, and methods of learning. Why refuse to study complicated questions in simplified form?

To insist upon the propriety of studying monkeys does not turn them into men. There are advantages in dealing with problems in simplified form, provided we do not then mistake them for the complex problems which are to be solved. No doubt the study of the past throws light upon the present, but the present is not therefore the past. The creature that became man emerged as less than human in the evolution of the primates, and we have not escaped the influence of that fact. This does not prove that he never emerged at all, or that man is today what he was when he emerged. If he has not shaken off all traces of his long ascent, why must we conclude that he has not shaken off any?

Man is what he is, not what he was. No epoch or hour of history has greater authority than the present epoch and hour. The stage at which man has arrived is at least as authentic a revelation as any which may be selected from the ages left behind. That this shows him to be something very different from what we find in the brute is indisputable, unless we ascribe higher truth to methodological abstractions than to concrete realities. Man is capable of doing and suffering in a way that his animal brother is not. He is tortured by fears and lured by hopes to which the ape is stranger. No ape brews the venom of human hatred nor does he transform passion into love. Apes speak no language, accumulate no tradition, never see the tragic or the funny side of things. They cannot invest their energies in schemes of conduct or sacrifice their lives for illusions.

Why is it that we cannot really understand ape psychology? Because we cannot return, even in imagination, to the *simplicity* of the ape's outlook and reactions. Is it

for the same reason that we do not sound the bottom of human personality? It is not. It is because we are unable to master the *complexity* of man's interests and responses. Once gain a sense of man's enormous power and pathetic frailty, his restless intelligence and clinging stupidity, his tender sympathy and refined cruelty, his possible nobility and coarseness—in a word, hold him before the mind in the bewildering actuality of his present being, and it is impossible to identify him with what he was before he had become what he is.

IV

The bewildering actuality of his present being—suppose we had a full comprehension of that. We would have made a good beginning in our knowledge of man, but only a beginning. For man is much more. If we are justified in rejecting the notion that a thing's "essence" is to be found in what it was in a past stage, we cannot claim that it is to be found in what it is now, neglecting what it has been. We must go at least as far as Aristotle felt it necessary to go. We must transcend a thing's local, transient occurrence and attain to an appreciation of its significance when viewed in the context of other examples of its kind.

What once was, what now is, did not explode into existence out of blank nothingness. It had a history. Things are events; deeds are rhythms; and "the lesson of life," as Emerson said, "is to believe what the years and the centuries say against the hours; to resist the usurpation of particulars; to penetrate to their catholic sense." Religion, for example, must be seen as it composes itself in historical perspective, viewed here and there, now and then, in primitive and developed form. As we go from one particularized type of religion to another we get a hint of something deep and urgent, something forever forming itself anew yet never coming to perfect expression. This growing something, very inadequately exhibited in any specific instance, but suggested when the several instances are studied in their temporal succession, is religion in the deeper sense, the *spirit* of religion, we sometimes call it.

So of every human project and institution. So of man

himself. We cannot learn too much of how his career began, nor of the stages where he rested in the long journey down the centuries. Not that we may thereby hope to come upon an early phase of human nature more truly man than another—we have considered the futility of this attempt—but that we may attain to a standpoint superior to mere phases, and catch some meaning of the drama as a whole. The drama has a story to tell which no single act or episode discloses.

As we attempt to survey the human venture in perspective we can scarcely fail to detect significant characteristics which may escape notice when attention is fixed on a temporal cross-section. We observe that from remotest antiquity man has refused passively to accept the world in which he happened to occur. No organism passively accepts the world, but the fact is conspicuous in the case of man. When we first discover him in the dimness of prehistory he is busy trying to cajole or compel the mysterious forces about him. His methods are crude, but they show his bent. *He intends to have a hand in his destiny.* Beginning as a creature all but at the mercy of circumstances, he slowly extends the area in which he is able to employ means in the attainment of ends. At first his projects are simple, his means weak and uncertain: simple weapons for hunting and fighting, simple devices for catching fish, simple implements for tilling the ground. But the projects take on greater and greater proportions, the means grow more and more clever and powerful. In time he learns to bridle the forces of nature, enters upon an era of spectacular inventions, plans to make himself master of the planet for ages to come.

Who, walking abroad in any great city today, can picture the landscape of only a few centuries ago? Who, looking out upon the contemporary world with its amazing accumulation of mechanical power, its unbelievable multiplicity of devices for material comfort, its countless organizations and institutions, can stretch his thought to match the accomplishment? One may indeed question the high valuation often put upon the *transformation of the physical environment* and lament the sacrifice of precious goods which it has cost; nevertheless considered purely as an accomplishment, no language is adequate to its majesty.

Few people have any true appreciation of these facts, but they would not object to them or deny their significance in a study of man's place in the animal kingdom. When they assent to the animal interpretation of man it is on the side of impulse, not on the side of intelligence. It is there, in what he wants and feels, that they believe man has made no progress beyond the animal or savage. Nevertheless in this realm also, which, until a better term is invented, we may designate the realm of the spirit, man has shown it to be his nature to recreate. He has gradually elevated the ethical level of his life and manners.

There are able people who deny this. They argue that man has made no moral progress whatever; that he has merely changed fashions in the garments under which he hides his fatal depravity. And it is not difficult to gather data which make the contention appear plausible. But if certain errors are guarded against, these data are less telling. Slowly throughout the centuries, and very rapidly in recent times, the great mass of mankind has pushed its way to the front, demanding and obtaining active participation in affairs. This great mass is prominently in our minds when we think of contemporary human nature, whereas when we think of human nature in ancient times we disregard the mass then existing and remember only the illustrious few or a selected group.

No one in his senses would claim that men in the mass today live on a higher ethical plane than exceptional individuals or an exceptional group of people did in a selected period of the past. One may, however, be quite in his senses and claim that *the general ethical consciousness* is a finer thing the world round than it was in earlier times. There is still much of superstition, brutality, and aesthetic indifference, but the power of agreeable fiction is less tyrannical than it once was, fellow feeling is effective over a wider range, and interest in aesthetic experience is more pervasive and liberal. *This is moral gain.*

Nor is it true that man's ethical outlook has not changed because the basic wants summed up in the words food, shelter, sex, continue to be motivating forces of action. They are not the simple cravings they were. Each

has been enriched by inclusion within a growing complexity of interests; each has been refined by a nicer perception of consequences and a greater sensitivity of feeling. This would be obvious were we not trained to approach experience through theory. We dip an intellectual net into fluid experience and mistake a catch of abstractions for quivering life. We disregard the differences between concrete behaviors, and are rewarded with the illusion of a quality common to them all. This we are pleased to regard as the *essential* character, although we never really come upon it, while the characteristics we do come upon we take to be *accidental*, hence negligible.

Well, it is just these neglected characteristics which enable us to distinguish the behavior of one man from that of another. To improve morally does not mean to refashion an essence called human nature, or to cease to be involved in the impulses and habits without which we would not only cease to be human, but cease to be. It means to bring impulses and habits under the influence of criticism, so that the significance of right and wrong may be better understood, so that sympathetic imagination may become more generous in its application, and the satisfactions aimed at may be more abiding.

Are we to draw the conclusion from these facts that human history shows an undeviating progress upward? Scarcely. The picture is not so bright as that. There have been losses and gains, now the one, now the other. We have no way of telling whether, if other routes had been chosen in place of those that were, mankind might not today be in a far better state, physically and morally. The contention is simply that in man a being has been achieved who dissolves the world in his restless imagination and precipitates it in dreams and schemes of betterment. It is his genius to form purposes and invent the instruments of their realization. *He makes the power of natural forces and the succession of natural events responsive to teleological vision, and thus alters the world he inherits, the world in its material and also in its moral aspects.* Denied this opportunity in the realm of fact, he transfers it to the realm of the imagination. Robbed of every compensating deflection, he sinks to the level of the animal, or, in Mr. Santayana's phrase, "folds up his heart and withers in a corner."

If an adequate description of anything involves the consideration of its historic as well as its contemporary manifestations, what of possible developments still to come? *Time has future as well as present and past dimension.* Consider religion once more. Had we gathered together into one concept the qualities of all now existing religions and enlarged this by the inclusion of all the religions which from time to time have appealed to men, much would still be left out. Tendencies are alive in the world today which will make the religions of tomorrow something different from what they have so far been. And there will be tomorrow after tomorrow. This future aspect—what religion will become as men discover how to make new use of the propensities that are the sources of religion—must be taken into account.

Nothing of which we know differs in this respect from religion, least of all man. *Man's nature must be held to include what he may become.* Suppose Aristotle had given a perfect characterization of humanity as realized up to his day, would he have done justice to the theme? Did not men who came later show attainments and capacities which had not appeared up to that time? Yet the capacity necessary for this achievement must have been present even then. In other words, man was more than his present and his past disclosed. *In some sense he was what he was still to be.*

Now what of this man of the future? What can safely be said of him? This is a subject, if there is no other, on which we can agree. Of the man of the future we know nothing. One may at best puzzle a little about him and hazard a guess or two. Possibly all it comes to is a confession of one's deepest hopes and aversions.

Let us then hazard the guess that a fruitful harmony will be found between impulses which at present are in conflict. For a very long time man's animal ancestors were united with other animals in a generalized mammalian stock. Possibly the backward pull of this early relationship is still influential in subtle and powerful ways. It may play its part in a natural gregariousness, in a readiness to feel and think as the crowd does. On the other hand, ages ago man's ancestors started off on what turned

out to be a human career. Something very urgent must have been operative in this venture. Possibly the potency of it is felt in the desire for independence and individuality. Whatever the explanation may be, men want to "team up" with others, often to the degree of being completely lost in the group, and they want to "go it alone," often showing an unwillingness to be interfered with by anyone.

There have been times when these two needs—to be one with others and to be oneself—could be reasonably satisfied in socially approved ways by everyone according to his capacity. But a number of developments in the recent past have produced conditions which make this more difficult than formerly. How is the individual to put trust in feelings of social solidarity when practical affairs and public opinion, whose authority he cannot ignore, teach him that all human beings are isolated units competing with one another for the most of what each of them wants? How shall individuality be attained under circumstances which make collective action increasingly necessary?

This double demand has made the realization of individuality a problem in every age. Genuine individuality, as John Dewey has pointed out in *Individualism Old and New*, is possible only if the individual is a sustained and a sustaining element in a social whole. Therefore when this social whole disintegrates or moves toward a new and perhaps increased centralization of power, so that the individual is displaced, the desire for individuality will feel itself to be menaced. It felt itself to be thus menaced in the past in Egypt, in Greece, in Rome, in Medieval Europe, in the Europe of the Industrial Revolution, and it feels itself thus menaced today.

Current outcries against encroachments upon individualism are not always prompted by a real concern for individuality. "Individuality for the many," says James Hart, "has long been little more than a joke. Try to imagine it for steel workers, for miners, for thousands in our large cities. As the flood creeps higher others are menaced, the so-called educated classes, for example, and they think it a present emergency." That is surely true. Persons who formerly acquiesced in the subversion of individuality because it did not touch their own, often oppose any step in social planning that interferes with their freedom of action. But it is not this class of persons only that is

disturbed. The danger to individuality of any kind is widely recognized today and its preservation is regarded as a difficult problem.

VII

The curtailment of freedom which is so noticeable a phenomenon of our day endangers a most valuable attribute of human nature. Nevertheless some limitation has become unavoidable. Individualistic ambitions can no longer be permitted to have free play if larger and larger numbers of people are not to be deprived of a fair chance in life. There may have been a time when unrestrained individualism was necessary in order that the earth might be possessed and turned to human uses. I do not think so, but if there was, that time is gone. There is now no escape from society and no place for socially irresponsible action. "Personal liberty," "individual initiative," and the individualism called "rugged" were conceived in a wide-open world that waited for exploitation by individuals for their personal advantage. The possible consequences of such individualism in our world are too serious to be risked, once they are anticipated. That much at least has been demonstrated by what has happened. Even the ideal of "knowledge for its own sake" now institutionalized and organized as a profession, cannot with safety be allowed to set itself up as superior to social demands.

Unfortunately, every restriction of freedom carries with it the ill-chance of destroying something of inestimable worth. No single stage in the evolution of the human species was so significant as the emergence of the individual self, the occurrence in nature of centers of novel experience, novel ardors, novel ideas, novel achievements of a practical nature. It is deplorable that encroachments on freedom too often bear down hardest upon the best kind and permit the worst kind to escape.

If individuality is to be safeguarded, or preserved at all, a distinction will have to be made between its social and its antisocial forms. For individual potentialities will in the future be compelled to realize themselves along with, rather than over against, community of effort with others. It will take the hardest kind of hard thinking

to make the change with a maximum of gain and a minimum of loss. Strong opposition will have to be met coming from those who do not know what it is all about and those who know only too well what it is all about. Interests and occupations will have to be reshaped in heretofore unheard-of ways.

This change may take more creativeness and courage than we possess. If we are wise and courageous enough, have time enough, and are favored by good luck, we may be able to institute a communal life in which the many will find new opportunity to enjoy novelty of experience in their personal tastes, in their relaxation, and in the work they do to make a living. If this co-operative form of individuality is out of the question, individuality for the many will vanish. It will be reserved for the few who prove to be powerful enough to seize and hold the privilege until their game too is up. The masses of us will take orders from those few. Individuality will either become communal, or in any liberal sense it will disappear, and with it will go the supreme quality of human nature.

VIII

Possibly another problem will gradually be solved. Until recently the institutions and occupations concerned with the production and distribution of food, clothing, and shelter were based upon the needs to be served. In the words of the economist, demand regulated supply. It does so no longer. The machinery of production and distribution has attained such vast proportions, so much is involved in its regular functioning, that demand has to be created to meet the supply. What was once a phase of activity subservient to life has become an end in itself.

Perhaps not only *an* end, but *the* end. Year by year business institutions grow larger, absorbing smaller ones or crowding them to the wall. Experts are drawn in to deal with physical, chemical, economic, psychological problems. In the battle for markets the outposts are pushed farther afield, while the combat is intensified at home. With so much at stake it is natural that business-men should devote themselves to something besides business; that they should seek to influence the enactment and

administration of laws, national and international, and that they should try to control education and to supplant religion as the definer of ideals.

Large numbers of people, among them many who are engaged in business occupations, *deplore the surrender of life to the enterprises necessary for making a living*. It seems to them the result of forces which cannot be controlled. Let us hope they are wrong. They mistake the conditions they find existing for the ways things must necessarily be. It was once unthinkable that there should be religion without monopolistic priesthood. It was formerly believed that political government must have its center in a royal personage. The unexpected has come to pass. Is it not possible that man will learn to conduct business without being dominated by Business? May not the future leadership in business undertakings belong to those whose vision is not limited to business success?

The present fashion, indeed the present necessity, may lead to an intensified concentration on the production and distribution of the things needed for the body. The fashion and the necessity may grow upon us. But this is not sure to happen. *Human nature is not necessarily business nature*. What man has done in the past and is doing now suggests other possibilities. The discovery may be made that the material wealth of society, instead of being the summit of human achievement, lays the foundation for its florescence.

IX

“Give a dog a bad name and hang him.” John Dewey has suggested that human nature has long been the dog of professional theorizing, with consequences in accord with the proverb. There are many puzzling things in life, and one of the most curious is the psychological profundity of novelists. Novelists, “mere writers of fiction,” seem to know men and women far better than our “thinkers” know them. Their people are not intellectual abstractions. They are living creatures responsive to forces which make or break them. It is therefore significant that novelists have a better opinion of people than the thinkers have. They seem rather to like them, not to dislike them, as the thinkers do.

At any rate we must conclude, I think, that it is unimaginative and unscientific to toss the majority aside as nonhuman. And it is rejecting the good with the bad indiscriminately, the promising and the hopeful human material along with that which is worthless and hopeless. One would have to be blind to see nothing but good in man or to see all men as equal in every respect, but one is just as blind not to see the good there is. Not until men in large numbers have freer access to the best fruits of civilization can we presume to say what they are capable of. Their spontaneous delight in being part of exciting projects with their fellows is one of their conspicuous characteristics. They endure hardship, they take pride in their work, they suffer and do not lose hope, they press on with no certainty that their effort will be rewarded. Something much better might be made of all this than has yet been attempted.

When those who influence men from above stop appealing to fear and envy as stimulants to advancement, and respected institutions stop perpetuating and exploiting ignorance and superstition for good ends and for bad ends—in a word, when such destructive influences are replaced by organized means to bring the best in human nature, whatever it is, to expression—we may be able to decide what men and women have it in them to become.

x

Turning back over the route which this discussion has followed, the conclusion must be that man's nature cannot be exhausted in one stratum of existence. He is what he *is* in the complexity and contradictoriness of his present striving. He is what he *was* in those ages of which he is the ripening fruit. He is what he shall find the means of *becoming* in the generations to be while yet his race may last. Being so much, he presents the appearance of hopeless contradiction, denying what he expresses, expressing what he denies. In strictness indefinable, he defines himself every age and every hour. He escapes the neat formulas in which the unimaginative would capture him. He refuses to validate the graphs invented to picture his career. No work of reason or art has portrayed

the depths to which he can sink or the heights to which he can rise. Helpless, without environmental opportunity, hard conditions have been unable to crush him, nor have favorable conditions lulled him to rest. He may come to naught in the end, but while the planet permits he will be, as Whitman said, "immense and interminable," like the great rivers; he will be the "god in ruins" of Emerson, the "not yet formed" of Browning, the "indescribable focus of the universe" of Hardy. So that, committing the aesthetic impiety of giving a turn to the Carl Sandburg poem, we may say:

O, I got a zoo, I got a menagerie, inside my ribs, under
my bony head, under my red-valve heart:
I am a pal of the world.

And I got something else.

It drew me out of the wilderness, looking, looking . . .
Wherever you meet me, you'll find me looking . . .
You'll find me looking . . . looking . . . looking . . .

Morality is a means for the satisfaction of human wants. In other words, morality must justify itself at the bar of life, not life at the bar of morality.

THINGS AND IDEALS

CHAPTER 2

Ideals and Character*

Last week I had the pleasure of rereading a book called *Christian Morals* by William Sewell, a former professor of moral philosophy in Oxford, England. Some books thicken your native bias and others help you to see the world from an angle not habitual with you. This book belongs to the latter class. It was written at a time when people were puzzled what to believe and what to do, even as we are today. The development and spread of new knowledge and the rise of new economic and social institutions had served to bewilder man, even as they have us. Professor Sewell wrote his book to the youth of his day with the purpose of meeting this situation.

One striking difference between his temper and ours must impress even the casual reader. He has a very simple method to offer which, if followed, will lead youth from confusion and doubt to clearness and certainty. The method may be put in a series of steps. If a youth is uncertain what to think or do, let him settle one thing before all others: let him not trust himself. Instead of trusting himself, Professor Sewell would have him turn for light to properly constituted authorities. Let him turn first to his parents. They have been divinely appointed to stand by him in just such crises. Parents are not infallible, but they are wiser, more experienced, than youth, and they have no reason to want to deceive. Besides parents, youth has civil rulers to look to. It is to the interest of civil rulers to guide people aright; but more than that, they have been appointed by heaven to perform

* From address of the same title in *Building Character*, Proceedings of the Mid-West Conference on Parent Education, February, 1928. Copyright, 1928, by the University of Chicago Press. Reprinted by special permission of The Association for Family Living, Chicago, Illinois.

just this function, and the laws under which they operate have their roots in the economy of God. Their judgment should be accepted unless it is absolutely clear that a higher authority is opposed. Superior to civil rulers are ministers of the Gospel, not in their own right, to be sure, but as spokesmen for the church, as channels for conveying religious tradition. By means of religious tradition the illuminating will of God is brought to bear upon the circumstances and purposes of human life.

Well, then, let the puzzled young men or women turn to parents, civil authorities, ministers of the Gospel, religious tradition. In this way they are sure to obtain the wisdom and strength necessary for living life at its highest and fullest.

II

How much of an appeal a book of this kind was able to make when it was published, about the middle of the last century, I have no way of telling. But I know, and so do you, how much of an appeal it would make to thoughtful youths today. It would make none. The hierarchy of authorities which Professor Sewell endorses would be rejected, and with a feeling of finality growing in degree inversely to the order which he adopts.

First, the church. Is it doubtful to anyone that the youth of our day is refusing to look to the church for guidance in the conduct of life? But the turning away is one of regret, not of disdain, as if in the hope that presently religion and the church might be differently conceived and once more become relevant to man's aspirations. With ministers the break is more clean-cut. And what intelligent youth could be beguiled for a moment into supposing that politicians are to be taken seriously as ethical guides?

But in my judgment the most radical division is that between the generations. In such matters, where one trusts to one's intuitive sense rather than to a statistical or logical demonstration, one may very well go entirely wrong. I can only say that for me this rift between the generations is one of the outstanding social phenomena of the times. I do not mean to say that this is something never heard of before. It has been heard of before, again

and again in special instances or in special groups. I think it may be questioned, however, whether there has ever before been so widespread, so sophisticated, so confident a challenge of the older by the younger generation. Affection for parents is probably more genuine and tender today than it ever was, as it is more frank and understanding. But with this attachment goes a conviction that the two generations have come to live in worlds so different that youth must be permitted to define its own terms of satisfactory existence.

III

For my part I am happy that the younger generation shows a lively inclination to stand guard at the portals of life, demanding to know by what right we of the older generation propose to determine what interests shall, and what interests shall not, be pursued. I wish the challenge were more spirited and uncompromising. Why? Because, as things stand, we are not qualified to play the role we assume. There are two reasons why we are not qualified: (1) The world in which youths of the present must find their ideals and achieve their characters is a world profoundly different, and in respects which have inescapable bearing on the problem, from the world in which we picked up our moral concepts and fashioned our characters. (2) The emotional world, the world of our chief interests, stands directly in the way of moral progress. Until we of the older generation are willing to pay some attention to these two sets of facts, until we can be shocked out of our complacency and can be got seriously to examine into their significance with reference to moral possibilities of mankind, we cannot be of any real service to youth. The service we can be in any case is very limited, but we can be of none at all if we persist in acting on the assumption that because we were here first our ideals are therefore best and all character must be modeled after the patterns we approve.

IV

Let us briefly consider these two reasons. Let us see in what significant respects the intellectual environment has

altered since the days when we were young, and in what ways the dominant interests of the present hinder moral advance.

Every thinking youth is accustomed to the view that the physical world of which he is an integral part is a vast machine which moves according to mechanical principles having no reference to human wishes or worths. He is so accustomed to this view that he may be unconscious of it. This vast mechanism, in which every human event has its allotted place, listens to no reason and responds to no cry. Every thought, every feeling, every act and aspiration of every man, woman, and child is caught in an interlocked order of things and pushed irresistibly on. Philosophers, scientists, and religious leaders have offered clever demonstrations to show that logically this makes no difference to men's higher interests. Men are no less responsible for their conduct, and every value of life remains just where it was. But men do not live so much logically as psychologically, and psychologically it does make a difference. Faith in human initiative is weakened; moral distinctions appear of doubtful validity; idealism becomes apologetic; and men simply do not feel as responsible for their acts as formerly.

No doubt we who are of middle age, or past middle age, are aware of this interpretation of things and yet find it possible to devote ourselves to causes of moral betterment. This does not prove much. For we accept the theory with our heads, not with our hearts. We *think* it, but do not *believe* it. We did not grow up in a world where the materialistic conception of life was common intellectual property. We grew up in a world where the belief prevailed that a supreme guider of destinies managed affairs. This item of faith colored whatever philosophy of nature we subscribed to. That is what we took into the fiber of our being, into the emotional substratum of our responses to life. And that is what our children did not and are not taking into the fiber of their being. Its place is taken either by the scientific materialism of the schools or the cruder more subversive materialism of the street. I am not arguing that this is as it should be or as it should not be. I am attempting to indicate a deep-going difference in emotional commitment. . . .

Perhaps nothing shows the difference we are considering more clearly than the newer psychology. The great word when we were young was discipline. Suffer hardness; be master of yourself; inhibit (to use a current word), inhibit your impulsive urges. This was the law and the gospel. Today the great word is "liberation." From every side youth is instructed that repression of natural impulses is the root of all evil. Was there anything remotely comparable to this in the instructions repeated to us? We learned to associate liberation and the sense of shame. The modern way is to put the odium on inhibition. If young men and women still hold themselves to standards—and they do—it must be with a feeling of doubt, if not guilt, for in the back of their heads is the conviction that repression is bad, and liberation good. And between those committed to this premise and those committed to its reverse there stretches a psychological gulf.

v

It must be clear that these considerations could be expanded and others added to the same effect. And it must be clear, too, that a generation which has grown up from childhood in a world dominated by the theories of physical science and the psychology of liberation and the generation which grew up in a world where these theories were forced to compete with rival doctrines for active allegiance must, in the deeper recesses of personality, be strangers to each other.

But, as suggested, this is only half the difficulty. The real pinch comes when we approach what we usually call practical life. I have said that our dominating interest stands in the way of moral achievement. Let us discuss this for a moment in the same sketchy way we have been compelled to discuss the other aspect of the problem.

When we were young, two great ideas had power in our lives. We believed ourselves as a people to be working out on this continent a political and social commonwealth intended to guarantee the opportunity for a satisfying life to every man, woman, and child. We often fell short in practice, and our ideal was in some of its features

utopian, but the thing we aimed at was vital and noble. This common faith is no longer alive in us.

We were devoted to another idea. Methodists or not, we could sing with Charles Wesley:

A charge to keep I have,
A God to glorify;
A never-dying soul to save,
And fit it for the sky.

This outlook tended in many cases to morbid and sentimental exaggeration but in general it expanded our scheme of life into vaster regions and brought balance into our quest for material goods. We paused in making a living to meditate on the purpose of life. We were saved in some degree from becoming what our physical circumstances would have made us, crass materialists, devotees of mere external comfort, misers of economic goods. But here, too, we have left the old ideal behind. It lingers in formulas, but the spirit is departed.

VI

Are we then without an ideal? Of course not. The earlier political and religious idealism has been replaced by a new interest. This may be observed at work in any community, large or small, in our broad land, and the term by which it may be fairly though roughly designated is *business*.

When Madison, Wisconsin, was originally plotted, the capitol building was placed on an eminence, the main university building on a hill a mile away, and the two were joined by a street lined with American elms. The elms grew to magnificent proportions, their arching branches meeting high overhead. Twenty years ago this shaded avenue was one of the city's natural glories. For the site of Madison might have been selected by the gods. As one stood on University Hill and looked down on the green city flecked with pale purple and grey roofs, across to a skyline of blue hills cut here and there by church spires, and as one watched the play of changing light on the marble dome which rose in calm majesty

over the scene, one was awed into silence, one thought of life as a finer thing to be. Today the blue skyline is hidden by tall buildings; the church steeples have all but vanished behind ugly masses of brick and cement; and the approach to the university is through a street walled in by buildings which, except in a few instances, vie with each other in ugliness. Even the capitol dome must compete with skyscrapers untouched by beauty and with enormous garish signs thrust into the line of vision by rival movie theaters.

Yet few people in Madison are not proud of the progress we have made in these decades. Our population has doubled; we have acquired five millionaires; the smoke of industry floats over city and lakes. Some acres of natural landscape remain to be improved by our realtors, and business enterprise has not yet been able quite to transform the city into an industrial center, but we have done well and we mean to do better. Annually, about New Year's, our two dailies issue fat special editions showing in pictures and statistics the material growth for the past twelve months. Then every good citizen gets on his toes and vows that the coming year shall break all records. And lest we weaken in our high resolve, a community institution and a community functionary work to keep us at the proper pitch of intensity.

In principle there is nothing exceptional in this instance. It represents a larger sacrifice of beauty than is usual, and a more flagrant betrayal of man's finer possibilities, but the trend is typical of our country as a whole. Making, selling, using things on an ever vaster scale is of supreme importance to us. Other interests are subordinated to this interest. Even pursuits in themselves not commercial are increasingly enticed into alliance with the philosophy of mass production and consumption. And anyone who utters a word of protest, anyone who, while admitting the romance and usefulness of business, refuses to regard it as the goal of human endeavor, is declared to be attacking the very foundations of civilized life. This is the prevailing mood of the American mind; and, in my judgment, it is directly in the way of moral progress.

VII

If what I have said so far has any basis in fact we may perhaps gather some suggestions therefrom. We are not to conclude, I think, that we who are older must surrender all attempts to solve the problem of ideals and character. We are *in* life and have the capacity to suffer and enjoy. That gives us as much right to try to make life what we desire it to be as those have who are younger. I propose to exercise that right. Moreover, having passed along the way, having discovered something of life's topography, our interest in those who follow us, mortals with like capacity for enjoyment and suffering, obliges us to offer such directions as we may think helpful. But in view of the inundations which have changed the route we passed over, and in recognition of the fact that each traveler must after all find his own path, we have good reason if we restrict ourselves to advising a sense of direction and to indicating a few conspicuous landmarks.

It is tempting for us to go into greater detail than this, to insist upon certain specific concepts, limiting ideals and character to these. The trouble with this program just now is that many of our moral conceptions no longer stimulate a response in youth. You remember the word "heathen." You recall how that concept used to stir us to activity, what sacrifices it aroused us to. It does so no longer. It has become dead to us. As a concept it is intellectually and morally obsolete. Well, other concepts have gone dead for the younger generation, as "heathen" has gone dead for us. Or, if they have not gone dead, they have moved backstage, have become part of the scenery. They do not enter vitally into thought and action.

A few years ago one of the most brilliant students we ever graduated tried to illuminate my mind on this subject. He was polite and gentle, but what he tried to communicate to me was that members of our faculty lived in a realm to which the students were strangers. I recall one of his phrases: "You live in a world where ideas are accepted as real which are not accepted as real in our world." He being a student and I a professor, he could not, of course, lecture me; he could only suggest

his meaning and hope that I might have the intelligence to grasp it. I did not have the intelligence.

Sometime later another brilliant boy and an athlete who happened not to be brilliant sat side by side in an examination. When their papers were read they were suspiciously similar. When I met the brilliant boy I said to him, "How would it be if we had lunch together today?" He accepted; and as we sat down to the table he remarked casually, "I know why you invited me today." "Do you?" I replied. "That's fine. Then we can talk about something else during lunch without embarrassment, and when we are through you can tell me what you think about the affair."

We had a good time at lunch, and then got down to the issue. When our two hours' conference was over he turned to me and said: "There is one thing I wish I knew: I wish I knew whether you really feel that what you call cheating in scholastic work is wrong, or whether you merely pretend that you think so because you happen to be a professor." I assured him that I really thought it to be wrong, and I tried to explain to him in what sense, and why. "Very well," he said, "I believe you. And I'll take my medicine. But I want to do you a favor before we part. I want to open your eyes to another world. You ought to know that very few students think as you do. I have never in my university life copied from anyone or used anyone else's work. I didn't have to. Besides, I would rather have taken a low grade from my instructors than have confessed to the fellows that I wasn't equal to the job. Anyway, it wasn't because I thought there was anything wrong about it. I had no such feeling at all. And if we had not had this talk today I would always have suspected that you really didn't either; that no instructor does; that he just talks that way."

Since then hundreds of students have been interviewed, in high schools and in the university, and my conviction is that certainly in the matter of student honesty, but also in matters regarded as far more important, our whole theory of rights and wrongs has lost its force. If we had nothing but it to depend upon in the matter of conduct, life would be far different from what it is. I am convinced that our moralizing—and we adults do quite a lot of it—is received by youth as so much talk which

must be patiently endured, but which represents nothing actually real in the world. And the effect of this is that morality itself is brought into question. We had better, I think, do what we can to keep vivid the distinction between good and bad conduct, and the reasons we have for making the distinction, instead of insisting that certain specific acts must be placed in the one category or the other.

VIII

To be of assistance to contemporary youth we must make another revision in conventional moral theory. In earlier times it was possible to make people believe that certain acts carried a taint with them, and that it was this which made them immoral. Taboo morality, in this or any other form, can only exist under certain conditions. Give the mass of men a voice in affairs, let knowledge become fairly general, and taboos lose their power to charm or coerce. In the sphere of morals we still live very largely under the spell of the taboo system. At the same time, the social and intellectual conditions with which this type of morality must be associated in order to function no longer exist. The effect of this paradox is already evident. It is bound to become more so. Unless we are willing to risk disaster by letting our theory of the moral life continue to lag behind while our knowledge of human nature advances, we must go beyond the conception of character as loyalty to a set of taboos.

Two years ago, having to speak on the subject of moral education, I asked the students in a logic class to help me by writing out their ideas on the subject. Only one out of a class of thirty-five volunteered to do so. That was a new experience. Students have uniformly shown a generous willingness to grant requests of this kind. At the very time of which I speak, 448 out of a class of 452 had volunteered to give their conception of the soul and what part it played in human life. A year ago, in a logic class of 125, I again called for help on the moral education question, and this time there were about fifteen volunteers. Still a disturbingly small number. Another curious fact was the complete silence of the young women. And young women as a rule are more, rather than less,

accommodating than young men in such matters. A reading of the papers furnished me with the clue both to the reason for the small number of replies and for the total lack of papers from the young women. With the exception of one paper, the discussion concentrated on a single subject: sex. Judging from these replies, one would conclude that the moral life has to do with this question and little else. Two or three papers introduced some remarks about bootleg drinking, but even the writers of these really only got down to business when they came to the question of sex. On this subject they all wrote with unusual forthrightness, as if dealing with reality.

And in all these papers the question of sex conduct was settled outright; there was no attempt to approach the problem in the light of its setting, historical or prospective. The conclusion arrived at was dictated by the taboo conception of right and wrong. Sex irregularity was deviation from an abstract, formal rule accepted as the taboo of taboos. You simply had to recognize or disregard its validity. These young men did not seriously ask themselves what bearing ideals are supposed to have on human happiness, individually and socially. The moral life seemed to them adherence to specific formulas. It seemed not to have occurred to them that it might be a way of acting, and one which blind adherence to forms might defeat. Surely we who have done our best to inculcate this conception have no grounds for criticism. We should rather be grateful that our theory has been only half believed and that youth is pushing ahead, even if blindly, to a position more in harmony with modern psychological and sociological insights.

IX

Perhaps we had better guard against a possible misunderstanding. The human venture has been in process for many centuries on this planet, and something of what man has learned in this long experiment is epitomized in moral codes. I am not arguing that all this should be disregarded. I am arguing against the acceptance of moral codes in a spirit of literalness, in utter disregard of the circumstances which gave rise to just those formulations and the changed conditions which they no longer fit.

Nor is it my aim to minimize the importance of habits. Without habits ideals would be impotent and character impossible. But it does not follow from this that only certain habits embody ideals, nor that character is limited to a particular set of habits. If we should succeed in convincing youth that the prevailing ideals and the conventional conception of character are ultimates, to be maintained at all hazards, this would be doing them an ill favor. For there is something more elemental and powerful than codes and habits. It is the impulsive urgency of life. And we are in the midst of an era of its liberation which has rarely been equaled. As a result, the circumstances and ways of human living have been undergoing transformation at a rate and to an extent perhaps never equaled before. We are only at the beginning of this process. Profounder reorganizations are to come. Insistence upon the finality of accepted standards of living will not stop this reorganization; it will only divorce impulse from aspiration. The dynamic mass of interrelated activity we call life will sweep on over our moral provinciality, but untouched by the influence of man's finer and nobler purposes.

x

We who are older have therefore to take one or two things to heart. We must endeavor to be much less dogmatic than we are wont to be in regard to the proper ideals of the good man, and much less rigid in our definition of character. We must get accustomed, if we can, to thinking of plasticity, adaptability to new loyalties and habits, as actually essential to character. Instead of thinking first of taboos and a specific set of responses, we must accustom ourselves to look for the presence of an active attitude or disposition which may realize itself in various interests and in varying forms of conduct. Of this disposition we may ask that it progressively enriches individual personalities, adds to the joy of existence for men and women generally, and is touched by reverence for the struggle for the good life in which mankind has long been engaged. But we will not insist upon the universal adoption of our particular philosophy of per-

sonal richness, our particular type of joy, our particular objects of reverence. The one thing we will demand and must demand of the moral man is a willingness to co-operate in making genuine loyalty to ideals and real moral achievement a possibility for us all.

This active disposition can only be acquired by youth if the social environment calls it into operation. Now and then an exceptional person will appear of whom this does not hold true, but it holds true of all but moral heroes. The present environment does not encourage the development of the disposition of which we are speaking. The search of youth for a life that shall have significance and worth is constantly betrayed by those who have lost their zest for life or who have a distorted idea of life's meaning. On the one hand we demand conformity to a catalogue of virtues which we know will involve compromise and hypocrisy, and on the other hand we demand a spirit of acquisitive rivalry which we constantly preach against and which does indeed destroy the very essence of moral purpose. This legalistic morality goes back to the time when men were slaves to rulers and priests. Nothing better could happen to us than that this moral tradition should be left behind as the intellectual tradition has been left behind which was associated with it. And there are hopeful signs that it may be, if those who are concerned for the higher life are as wise as they are devoted.

For this reason, it seems to me, the present challenge issued by youth to age is the hope of moral progress. Just how much hope may be justified depends upon how widespread and how deep-going the younger generation's dissatisfaction with the current manner of life may be. Possibly the protest is ephemeral. Even if it is not, it may fail of the imagination necessary to achieve workable ideals. The danger is that in ten or fifteen years the vast majority of those who now protest will have been absorbed into life on its conventional level, constituting so many units of resistance to change. Anyone concerned for moral improvement must give such assistance as he can to those whose antagonism to the present scheme of living seems incurable and who appear to be earnestly seeking for new individual and social purposes.

XI

At the conclusion of Professor Sewell's book, with which we began, a reader whose hand has since turned to dust put what he regarded as a proof of the divine origin of Christianity. "The infidel and the atheist," he says, "teach subjugation of the passions for worldly purposes, but not that higher subjugation which Christianity insists upon." I think this writer was wrong. Subjugation is not a divine, but an all-too-human, idea. And it is an idea which, for the present at least, is powerless to move men. Life, life more abundant, is the impulse of our time. The crucial question is what meaning shall be given to life more abundant. Therefore everything that is possible should be done to make man's environment such that it shall encourage youth to give the noblest meaning to the venture. This calls for devotion and heroism. The task is far-reaching. It concerns the home, the school, the church, life at large. But in comparison with it, not much else matters. And every man has the sphere of his influence to work in. Let him be a moral volunteer there where the issues of life come within his range, and trust to the outcome.

Let us remember that even Plato wore spectacles, and that if he or any absolutist ignores or repudiates this fact, it only makes him careless of the kind he wears.

JOURNAL OF PHILOSOPHY

CHAPTER 3

Realistic Idealism*

I

In the minds of most people realism and idealism will not mix. It would never occur to them to speak of realistic idealism. They would think it nonsense. In their vocabulary the word "real" stands for something solid—a rock, an animal body, a pocket full of money; the word "ideal" for the shadowy and dreamlike. That is because they have learned the words from books. And the words have grown into a theory that separates the facts or events as the words are separated. But life experience puts the real and the ideal together. And what life experience puts together let no theory put asunder.

Realism and idealism *can* be so defined as to make them incompatible. As attitudes toward the world, however, the two have always functioned and still function in interrelation. Every man must be a realist at least in the sense that he cannot ignore bodily needs or refuse to notice the physical environment. He has wants which compel him to put forth practical effort even if he despises "the flesh" and aspires to live only "in the spirit." Unless he belongs to the "idle rich" and can shift the burden to other shoulders he must make a living, and must try to win a place which makes the struggle endurable, and, if possible, enjoyable. In a hundred ways he must acknowledge as real the conditions upon which he has to rely to make his life as satisfactory as he can.

This practical *realism* is no more inevitable than practical *idealism*. "Man is born to idealize," as Mr. Justice Holmes said, "because he is born to act." Everyone is

* From *The Human Enterprise* by Max C. Otto. Copyright, 1940, by Appleton-Century-Crofts, Inc.

engaged in transforming the given real into something else, something no less real but more satisfying. That is to say, everyone is intent upon making desired actualities out of imagined possibilities. And what are imagined possibilities which a man hopes to make into actualities but realistic ideals?

It is this characteristic of human beings which sets them off from all other creatures. For thousands of years the environment has been worked upon to bring it into better harmony with the desired. If there are departments of life from which ideals seem to be excluded, or if in these times it is hard to detect ideals at work below the surface of what is going on, one reason is the error of believing that all ideals are ideal. They are not—except perhaps from the viewpoint of those whose ideals they are, and when all other interests are in total eclipse. Men strive to attain the not-yet-attained and willingly pay for it with what they have. The ends aimed at may be good or bad, material or spiritual, attainable or unattainable. These distinctions touch the nature of the objects desired, not the eagerness for the unrealized which runs through them all and is common to them all.

Practical and aspirational aims are thus naturally interdependent. Nor can this interdependence ever be altogether undone. There will always be some relation between a man's efforts to live and what he hopes to make of himself and his life. It can, however, be reduced to a minimum. A narrow workaday objective or a so-called higher interest may steal the show. Realism and idealism then move apart until they are regarded as opposing interests that cannot be reconciled. Let us for the present disregard this all too common outcome and concentrate upon what is after all the deeper manifestation—the living interdependence of action and aspiration.

II

Man is by nature active, and he is aware of what he wants; not always and in every instance, yet frequently enough to become involved in the problem of deciding what he wants most. As the world is constituted wants are bound to come into conflict, one crowding out another. There are persons who find it relatively easy to

choose between conflicting wants, or who act as if they did, and persons who find it so difficult to choose that they fall into the habit of letting the course of events determine the issue for them. In general, however, men and women recognize the desirability of making the best selection they can. They have learned the truth which William James stated so well:

The actually possible in this world is vastly narrower than all that is demanded; and there is always a *pinch* between the ideal and the actual which can only be got through by leaving part of the ideal behind. There is hardly a good which we can imagine except as competing for the possession of the same bit of space and time with some other imagined good. Every end of desire that presents itself appears exclusive of some other end of desire.

They have learned this truth, and they make an effort, often a praiseworthy one, to adopt some dependable rule of deciding which ends of desire are of most worth.

The problem of course extends beyond a man's own wants. Occasions arise when he has to choose between his own wants and the wants of others. Art Young, in a wistful cartoon, shows himself bewildered in the center of a path, a tall, white, persuasive angel tugging at one elbow, and a tall, white, stern angel tugging at the other elbow. The comment which accompanies the cartoon makes this confession, and he makes it for us all:

Hardly a day goes by that the problem of duty to myself—versus duty to others—does not arise. I confess having a well-developed ego—but am just as ready to admit that no one's ego is of much importance. But I am here. And when to forget self-interest and give way to the self-interest of someone else, has been one of my worries throughout a lifetime. The practice of a reasonable selfishness is just as much a duty as indulging in a "reasonable" altruism. But what is "reasonable"? When to loan money to a friend, when to help a world cause—this "me or thou" stands as one of the big problems of living.

The "me or thou" problem is not limited to the choice among duties. No man's interest in life is confined to the one aim of doing his duty. Even where the sense of ethical obligation is strong it does not cover the whole field of desire. The acutest "me or thou" conflict arises in the area beyond settled duties. Most of us must venture into that moral no-man's land where the drive of individual ambition and the conflicting diversity of wants give rise to

the sharpest competition. While each person is acquainted with only the merest fraction of the people whose life aims and successes or failures affect his own, he is nevertheless affected by them in all sorts of ways. They impinge upon, and modify, frustrate, or advance his plans.

Interrelated as the lives of men are, some form of give and take is forced upon everyone. Indifferent individuals may let it go at that. Most people are not indifferent. They refuse to be satisfied with this externally enforced result. They try for something better than is attainable by the pushing and pulling of one interest against another, with such use of intelligence as shall make the pushing and pulling most effective. They make an effort to judge the relative merits of the ends aimed at, and try to secure a satisfactory adjustment of competing goods.

Human beings are not only so involved in each other's lives that they are compelled to respect each other's wants whether they like it or not; they not only examine competing wants with the intention of reaching a more acceptable result than can be brought about through sheer force; they happen to be interested in other people's interests. The scope of their imagination may be narrow, may be limited to a family, to a friend or lover, to blood relations, or it may be as broad as a group, a community, mankind. In any case, people are made happy or are depressed by ups and downs in the happiness of others. Desires of other people become identified with their own desires.

So true is this, that again and again it is deemed desirable to surrender self-regarding desires to other-regarding desires. "Long-headed selfishness," this has been called, and the argument is made that all action is self-centered and can only pretend to be otherwise. But this is not an adequate explanation. It must be admitted that everything a person does is expressive of himself, is an act of self-realization. To go farther and say that all self-realization is self-conscious, or self-inclusive, and that the interests of the other self or selves are never motivating causes of action, is not good psychology. The relevant facts have been correctly described, I believe, in these words:

Acts have a source and a termination. The source is always the acting self, but the termination may be either the acting self or another self. A father may bring home something to eat which suits his own taste but is liked by no other member of the family, or he may bring home something he does not himself care for but of which the other members of the family are especially fond. Whatever the ultimate psychological explanation may be, these two acts can not be reduced to the same category.

The reply may be made that in the latter case he does it after all because he likes to, and so to please himself. He does it because he likes to, but not necessarily to please himself. In rare instances the latter may be true; more often, however, the act is less sophisticated, being a direct response to the thought of the family. It is the anticipation of the pleased family, not the anticipation of the pleased self which impels to action.

The wants and needs of others, then, may induce a man to act without being translated into forms of self-interest. The prospective good or evil state of another person may directly stimulate behavior, just as one's own prospective good or evil may. And since other wants than those of the actor are productive of action, they must be added to the competitive complexity which creates the problem of choice for every thoughtful man or woman.

III

Seen from a distance it looks as if a mob of desires, all crowding to get front seats in the theatre of life, were pushing and elbowing their way from one position of advantage to another, giving no thought to those that get poor seats or none at all. Closer observation shows the struggle to be less reckless. Desires overlap and intertwine, and there are desires to help the desires of others along. People differ greatly in the kind of life they desire for themselves, and in the extent to which the desires of others are imaginatively grasped and worked for. They differ in the tenacity of purpose with which desires are pursued. But the time never arrives for anyone when his own wants are so simple, and the wants he responds to beyond himself are so few and so harmonious with his own, that it is a simple matter to make a choice. The fact is that a good many give up the whole business as too difficult for them to cope with. They lose interest in the earthly performance and either become cynical pessimists or center their hopes on a front seat in heaven.

Out of this competition of wants have developed various theories of the good life. Standards of right and wrong presuppose it. It is responsible for the methods which have been invented to evaluate desires and to deal with conflicts among desires. The conditions of life, we were just saying, force an adjustment of a kind upon every one of us. Even lower animals give preference to some goods over others, although without comparing their actions and approving or disapproving them. There are human beings whose choices are scarcely less automatic.

We shall leave all such persons out of account. For everyone else Plato has spoken the truth: "The uncriticized life is not fit for human living." Havelock Ellis has spoken for them, too: "Life must always be a discipline; it is so dangerous that only by submitting to some sort of discipline can we become equipped to live in any true sense at all." The same thing has been said or implied by all the teachers of mankind, whether they were religious leaders, social reformers, or men of affairs.

In this as in every relation to the world no man starts with a clean slate or from scratch. Experience writes upon him before he is aware of it, crisscross, one impression upon another, like the pictures in the caves of his primitive ancestors. When it occurs to him to ponder which way to go he is already an irretraceable distance down the road. He could not give an unbiased answer if asked what is best to desire, how to balance one desire against another, whether to reflect upon conduct or simply drive ahead and take what he can for himself. The dice are loaded by habits formed before he knew he was forming any; by the customs which became authoritative without his planning it; by the whole complexity of associations and activities which were interwoven with his outgoing nature as he grew up in the community.

In one respect this is an advantage. The individual is not required to set himself up in the business of living entirely on his own. He can borrow from the accumulated wealth of human experience. He can draw upon the capital stock of knowledge, ideas, rules of procedure, amassed by those who preceded him. In another respect it is a disadvantage. He mortgages his freedom. He is constrained to carry on the established business, to guard against the loss of inherited resources and to add to their sum as he

can. Counting up the profits and the losses, we can surely say that continuity of experience is a precondition of growth in civilization. But we can say with equal force that growth in civilization is contingent upon significant deviations from continuity of experience.

These items, severed from their vital togetherness so that they may be talked about, are of course subtler and richer in their context than any description can suggest. But even a cursory examination corroborates what has been said previously about the competition of wants. Some of these wants aim at things near at hand, others at possible satisfactions more or less remote. We see regulating devices and principles at work which have come down from the past, and new ones taking shape out of present struggles. Every man and woman is in search of happiness as defined by his peculiar nature and the environment in which he lives. There are people who think very little beyond what they immediately desire, but all in all they are controlled and guided not only by habits, customs, legal enactments, current fashions, but by more or less inclusive plans of life. Let us stand off far enough from details to see the pattern of these larger configurations.

IV

Since we mean to pass judgment upon these plans of life as methods of reaching the best result in dealing with conflicting aims, we must decide, at least in general terms, where we hope to come out, or what we shall set before us as the highest good. And I see no way of doing this, realistically, unless we begin with the desires of men and women as of primary importance. Anyone who denies this will be found to have adopted a theory of conduct which makes them secondary. In other words, we shall take our cue from universal human behavior and make this the goal: *the most livable life for all who have a life to live.*

Generalized in this way the statement might pass with most if not with all people. Not so if we add: *And each person to be the final judge of what "most livable" means for him.* Yet this is the specification which I should insist upon including. For if the good life is to be actually good it must be found good by him who lives it. True enough,

we have only imperfect knowledge of what makes life most livable for *anyone* to say nothing of *everyone*. But neither are we completely in ignorance. We do not need to be told by a philosopher, as Plato thought we did, whether it is better to be sick or well. We *find* it better to be well immediately. In the same direct way we are able to judge of any number of experiences. When there is doubt as to whether something is good or bad, in other words, whether it is to be desired or avoided, someone has to taste and find out. And everybody knows how reluctant, fortunately, most of us are to let another's tasting be substituted for our own.

Since the desires of the individual are primary and ultimate, a most livable life for everyone is out of the question unless there is a possibility of richly various satisfactions. Obviously this creates an additional difficulty. There must be adjustment of one to another. Here again we are at a disadvantage through ignorance. We do not know offhand how or to what extent unique livability for each individual is attainable in harmony with all the other individuals who likewise are to be satisfied. Yet here too we do not proceed in total darkness. We have numerous examples of shared experience to guide us. We know that some courses of action take us toward, while some take us away from, a livable life in co-operative undertakings. Besides, desires are not mutually antagonistic throughout. Some desires support other desires, and all human beings have social desires which are as insistent as any. Consequently, variety of satisfaction, no matter how amply realized, does not involve a state of anarchy. It sets a problem which is frequently a great delicacy and, in its wider ramifications, always of great complexity, so that it cannot be solved easily, all at once, or in a short time. Nor is there any hope, as there is no need, that it will ever be solved finally. But it is possible to move step by step toward its solution if the men and women of average good will give their minds to organizing life as a whole so that the individuals who make up that whole have a fair chance to gain the richest quality of experience of which they are capable, and which the conditions of existence can be made to yield.

With this agreed upon as the goal, let us take a look at three outstanding philosophies of conduct: (1) The

doctrine that might alone is and must be the arbiter. (2) The theory that a good outcome is necessarily dependent upon an alliance with a supernatural being or order. (3) The view that we have called Realistic Idealism. Which of these plans employs the best method of discovering and realizing the most livable life?

v

The method of dealing with conflicts of interest which is most obtrusive in the world today is the use of physical force. It is an old method. There have been times when it was even more universally relied upon than now, although it was never exemplified on so vast a scale or with such driving power as in the twentieth century. Still, its real character is not clearly perceived. The reason for this is that more often than not physical force is mixed with other forces. As a rule those who resort to it declare they do so for the accomplishment of ends which are not definable in terms of sheer might. They do not advocate might for might's sake, but for right's sake, for justice, honor, or something of the sort, all of which can have no meaning in a consistent might philosophy. Sometimes, to be sure, though not always, these added claims are hypocritical. We must get rid of this source of mystification, whatever its cause, if we are to appraise the philosophy of might as a desirable plan of life. What is this philosophy when reduced to what William James would have called its fighting weight?

The essential characteristic is *the deliberate ruling out of the other side as having any right to be considered*. A conspicuous historical example, now everywhere admitted to have been such, was the Versailles Treaty. In that settlement no weight was given to the interests of one side. Those upon whom the terms of the settlement were forced were denied a voice in deciding what the terms should be. . . .

The differentiating thing is not the use of power as such but the spirit and aim which permeate its use. Every plan of life must be able to exercise power, even physical power, to realize itself practically. In fact it will get no hearing unless it is backed up by power of some kind. This is important to keep in mind, especially for

one who means to be realistic and at the same time to recognize the function of ideals.

The differentiating thing is not the use of power, neither is it the manner of procedure. War between nations exemplifies the might ideal, but it may operate through the maneuvers of pressure groups arrayed against one another, or through the strategy of "spiritual" leaders intent upon suppressing "the carnal nature of man." It may dominate the technique of compromise and even the deliberations around a conference table. It is active in every case where there is a deliberate purpose to reach an objective without regard to the value of the goals that must fall by the way. Individuals or groups or nations act out the might philosophy, however they go about it, when they push others aside to take all they can for themselves.

Suppose this analysis is correct, perhaps it only proves that mutual considerateness is a purely sentimental ideal; that although appearances may seem to indicate the contrary, reality is always and forever expressive of might. . . . But whether might philosophy is or is not the one and only realistic attitude, it is incapable of furthering the most livable life. For it is its very genius to constrict, not to enlarge, appreciation of values. Wherever it rules it paralyzes social imagination, intensifies and spreads a destructive spirit, poisons the atmosphere with hatred and suspicion, and consequently is not directed toward but away from the attainment of the general welfare. Not only so, but it makes progress toward that goal more difficult in proportion to its prevalence.

VI

Might philosophy is familiar to practically everyone the world around, and it is widely respected and still more widely practiced, usually, as I have said, mixed with contrary influences. In the Occident a second plan of dealing with human desires is highly approved. The heart of it is reliance upon a Supreme Being or Power at work within or behind the world of the senses. The Christian church is its accredited representative, although there are numerous other organizations and movements that adhere to the same position. According to this view human beings

are by nature wicked. If left to themselves they are incapable of making a proper choice among desires, and if they could, they have not the will to master their baser natures. Any respectable pattern of behavior must therefore be introduced from a supernatural region, which must also provide the power to live by it in preference to natural inclinations.

Much may be said for this conception. It stirs something deep in human nature, its provisions are easily understood, it has ethical authority. It sets a goal before men which offers to each one, from the humblest to the greatest, the opportunity of sharing in an enterprise vaster than any undertaking that man can devise. The trouble with all naturalistic plans of life, as seen by the supernaturalist, is their deficiency in just these respects. They have nothing but the life of desire to draw upon. It is difficult to see from this standpoint why one desire ought to be preferred to another, and, granting this to be done, where the energy is to come from to make the "ought to be" prevail. By what logic shall a man be persuaded that he does not want what he wants? What reason can be given why a man should not deprive another man of what he wants except that this other man does not want to be deprived? But the wants of another have no higher authority than one's own. Why surrender one's own, unless of course that is the better way to get what is wanted—which is not to surrender it after all. There are only two possibilities, the supernaturalist contends, and no more: either a plan of life "from on high" or a free-for-all among desires.

Supernaturalism has very definite things to say with regard to conflicts of desires. It defines right and wrong on the most unimpeachable authority, that is to say on divine authority, and indicates the good which is to follow right action and the evil consequences of doing wrong. Those who adopt this way of living are supplied with a card of right and wrong acts, which simplifies the whole problem of conduct, and they have access to various means of strengthening moral purpose when it weakens. That the true supernaturalist makes contact with something or other of extraordinary vitality is almost too obvious to mention. . . .

Superior to might philosophy as this view of things is

by virtue of the more critical vision and the more elevated devotion to human good which it calls out in men, it nevertheless suffers from serious defects, one of which in particular is relevant to the problem of bringing about the best possible adjustment of competing desires. Supernaturalistic programs turn away from man in his full, natural manifestation. They concentrate on a *piece* of him, on the piece called the soul or spirit, the theory being that this is all that can be saved or is worth saving. Man in his wholeness as a physical, intellectual, emotional, practically ambitious yet aspiring creature is offered up to an ostensible spiritual essence. An organized "higher life" is developed within, but distinct from, the daily life of the community, and a body of experts, who are under no obligation to help in making the human venture a success, except in so far as it bears on the welfare of the soul in a world to come, are assigned the task of defining that higher life, and of seeing that its provisions are carried out.

Supernaturalism therefore has the tragic tendency of setting the business of living and the art of life against each other as enemies. But every man is composed of at least two pieces: the "spiritual" piece which supernaturalism hopes to salvage, and the "natural" piece, which depends for a happy destiny upon making good use of earthly opportunity. Each can be thwarted and twisted but not killed. Schemes of oversimplification at their best force mankind to get on, more or less apologetically, in two areas of effort, the one dominated by material ambition the other by immaterial ideals, and at their worst, only succeed in producing abnormal or pathologically exaggerated expressions of restless impulse.

VII

We turn now to a radically different way of dealing with the urgency and diversity of men's wants. It too has long been in actual use. Instead of proposing that free rein be given to the most powerful individual or mass desires, without regard to what happens to the rest, or that certain desires be suppressed as "vanities of this world," again without regard to the goods thus sacrificed, this method undertakes to help men to extract all the

happiness and worth they can from life. Naturally, this is a more elusive goal than one less generously conceived. But who can insist on a simple objective for people whose wants are far from simple, and who are coming more and more, as a great aviator has pointed out, to live together as it were in one room?

Yes, this third plan is more difficult to apply than the other two. This is not because of anything in the plan itself, but because it calls for an emotional and intellectual temper which we have not been sufficiently encouraged to develop—a willingness “to give the other fellow a break,” and some degree of social imagination and co-operative intelligence. It requires the attribute which Mr. Justice Holmes valued most highly: “Faith is faith in effort.” In view of what we hope to achieve these requirements are positive advantages.

Let us remind ourselves that we are proceeding on the assumption that what people want from life, not only some of them but all of them, is the primary authority. What they *ought* to aim at can only be determined by observing what they *do* aim at. Let us remind ourselves also of the problems which this occasions: how to make sure which of the individual's wants are preferred when a choice has to be made, and how to prevent any person from losing out because the wants of various persons interfere with one another. It is clear that these are practical problems demanding practical means for their solution, not merely theoretical problems to be solved by schematic generalizations. And it is just as clear that we cannot expect a perfect outcome. We do not know enough, are not disciplined or good-willed enough, to reach anything like perfection. All we can hope for is the best result which our natures, conditioned by past and present circumstances, will permit us to obtain; a better result than can be obtained otherwise. The technique which enables us to secure in this sense the most abundant and meaningful life puts us on the road toward a progressively better solution.

Well, what is the specific nature of this promising technique? It is a procedure which enters into a situation where desires block one another, and there tries to discover a line of action that will be of advantage to all. A filling station in a small town found that it was losing

customers because it was somewhat concealed from passing automobiles by big elm trees. The owners of the filling station prepared to have the elms cut down. Strong opposition arose from residents who had admired the trees for many years, and they were able to rally to their cause defenders of natural beauty in the town and the surrounding county. The dispute grew hot. It was carried into the newspapers. One side insisted on business necessity, the other on aesthetic values. The two stood over against each other, refusing to budge. It seemed to be one of those cases where someone has to give in.

A young man became interested in the controversy who recognized the validity of both demands. He tried to think of a way out which would sacrifice neither one. The solution he arrived at was to unite in the expense of putting up a sign at the roadside calling attention to the filling station, thus taking care of justifiable business claims, while at the same time protecting the beauty of the surroundings by saving the trees. This young man was putting into practice the operating principle of the method under discussion.

This is a simple illustration, but it has in it all the elements of controversy. And its simplicity makes it easy to pick out the distinguishing marks of this way of going at things. These are: (1) An honest attempt to appreciate as fully as possible the conflicting aims as they appear to the protagonists. (2) The intuition of a new aim through which the underlying purposes at issue can be achieved although a specific form of those purposes is surrendered. (3) The embodiment of the new aim in a practical program.

At first glance this may seem identical with what is known as compromise. The difference, however, is profound. In the procedure just outlined the situation is confronted as a whole, and while the participants are more keenly alive to some interests than to others, they intend that the eventual solution shall profit all who are involved. Activity therefore centers upon discovering a new end which, when discovered, will be seen to accomplish this result. In compromise proceedings interest in the situation is strictly onesided. No responsibility is felt for the total eventualities and hence there is no seeking for a broader objective. The particular things

desired at the beginning remain the same throughout. And what each participant ends with, and in most cases all he expected to end with, is "splitting the difference." Thereupon each intends to get more of what was originally wanted when an opportunity offers itself, giving up only what has to be given up for fear that otherwise more will be lost. There is always a novel step forward in the procedure under consideration which is lacking in compromise. And this difference is one of those vital differences which, as we say, makes all the difference in the world.

VIII

An objection has no doubt popped up in the mind of the reader: Improvement upon compromise technique is all very well in theory, but is it in the range of practical possibility? Is it not rather pure wishful thinking, sheer romanticism, a sentimental avoidance of the plain facts? Can anything be more glaring than that those who have taken charge of affairs in the world have done so by being consistent and ruthless in the application of self-seeking strategy? Could they have succeeded as they did had they not carried out with more than ordinary rigor a disposition common to man? Is it not true that human beings show a stubborn disinclination to divide the goods of life with others? Are they not bent on getting everything they can for themselves and holding on to it? A proportion of mankind may be actuated by altruistic motives, but is it not a woefully small minority, and does it include the prosperous, the respected, the powerful?

No fair-minded observer will make light of this objection, or dismiss offhand the analysis of human nature which supports it. A plan will not work unless there is a will to work it, and this is true in a special sense of the one now before us. That a great many people do not care to make it work would be hard to dispute. They push their way from one vantage point to another, hunch up on every regulation adopted to make the going a little more equal, never observe the rules of the game unless some officer of the law has his eyes on them, and everywhere and always get away with everything they can. Gangster mentality abounds and by no means only in

gangster circles. And there are well-disposed people, very many of them, too, who can only go along with any scheme of life which exerts pressure upon them. Besides this the charge may be leveled at all of us that we are creatures with hair-trigger feelings and highstrung nervous systems. We are shortsighted and easily frightened out of our wits. Occasions are therefore bound to arise when we will not stop to unravel difficulties, but will tear the threads and take the consequences. In other words, the practice of rational and humane living constantly breaks down here and there, and periodically it breaks down almost everywhere.

But is it intelligent to take these breakdowns as the end of the matter? Shall we make the failure of a thing the criterion of its real nature? Would it be accurate to describe an automobile as a motor vehicle which turns turtle and kills its occupants? It is a fact that it does this; but this fact and all the other facts which belong on the debit side of the automobile's account with life, would, as everyone knows, if taken alone, give an utterly false notion of the automobile's usefulness.

Then how about people? Reckless ambition to get ahead of others, bursts of anger, blind passion, craftiness, vulgarity, all the wrecks of human nature, are part of the story. Taken alone, however, they give an utterly false notion of human motivation. We got a completer picture of the reality in the opening sections of this chapter, and the reader can get a still completer one by candidly observing what goes on about him. He will find more than enough co-operative spirit, more than enough practical ingenuity, and whatever else it takes to put realistic programs of mutual helpfulness to work.

And they have been put to work. They have been at work, as I have already said, for a long time. Not only inner personal conflicts, but the interests dividing generations, sexes, employers and employees, even nation and nation, have been explored for possibilities of better relationships, and better relationships have been brought about. Of course there is still plenty of room for improvement in our *modus vivendi*; there always will be room. It takes time to perfect so relatively simple a thing as a mechanical invention. It takes time to find the cause of a disease and cure it. Should it not take time to

understand what we are up against as human beings, inside ourselves and outside ourselves, and to learn how to get on with each other? We have made progress in spite of tragic setbacks. There is no ground for doubting that we can learn to move forward with greater steadiness and security. We will do so as we become increasingly aware that only by living for a more inclusive ideal than the competitive struggle for survival shall we be able to live at all.

IX

Our discussion of three outstanding plans of life has been confined in the main to their operating principles. This was not done because the particulars of behavior are unimportant, but because principles of living are more basic than items of conduct, although the two are inseparable. Understanding the principles, one needs only slight experience of life to make a pretty good guess what acts will naturally flow from them and what rewards they hold out to the actors.

We have tried to enlarge our acquaintance with an idealism of a realistic type. There are idealisms so idealistic that they exclude all workable ideals, as there are realisms that take the reality out of everything experienced as real. There is not much to choose between them. The view presented in this chapter as realistic idealism sees in ideals the substance of projected desires, and sees in reality a stuff that is previous to ideals. Whether this way of looking upon our world will spread among men, together with the humane, intellectually creative attitude which is its counterpart, remains to be seen. Everything depends upon the kind of men and women who succeed in giving life its predominant quality. And that is not entirely out of human control. "There is no inevitability in history," as Mr. Justice Frankfurter has said, "except as men make it. . . ."

There are two ways of taking the present world upheaval. We may take it to be the fateful disintegration of civilized life, or we may take it to be a driving search for a better social orientation.

JOURNAL OF SOCIAL PHILOSOPHY

CHAPTER 4

The Ethical Neutrality of Science*

I

Giordano Bruno is said to have remarked: "If the first button of a man's coat is wrongly buttoned all the rest will be crooked." It is surmised that he was thinking of the boyhood step whereby he surrendered his aspirational life into the hands of a monastic order. The remark is applicable to science which was young when he was. At the threshold of unfolding knowledge and power science relinquished the realm of ideals into the hands of church religion, and from that surrender crooked consequences have followed down to the present day.

We have already discussed the problem of how to bring what we know and do into harmony with what we aspire to be. The development of science has forced this problem upon us in its most serious and baffling form. Unless a better relationship between scientific progress and the interests of humanity can be worked out than was contemplated in the seventeenth century, or has been thought of since, the prospect is extremely unpromising. We may in that case look forward to the eventual downfall of the scientifically advanced races. Only those which are backward with regard to science can hope to survive—providing they can keep out of the way of their scientific neighbors.

What was it the early scientists did so that the first button of the coat was wrongly buttoned? What were the derangements that followed all down the line? To get an answer we must read a little history.

* From *The Human Enterprise* by Max C. Otto. Copyright, 1940, by Appleton-Century-Crofts, Inc.

In the summer of 1662 Henry Oldenburg, Secretary of the Royal Society newly founded in London, wrote a letter to Benedictus Spinoza. "Come, excellent Sir," he pled, "banish all fear of stirring up the pygmies of our times; too long have sacrifices been made to ignorance and absurdity; let us spread our sails to the wind of true knowledge and search out the innermost secrets of nature more thoroughly than has been done hitherto." It was as if the very spirit of the age had spoken, the great age that ushered in modern experimental science. Exuberant life was evident everywhere: in unprecedented commercial expansion, in violent political conflict, in vigorous social and religious ferment. Yet above all it was a time responsive to the exciting challenge echoed by Secretary Oldenburg: "Let us spread our sails to the wind of true knowledge and search out the innermost secrets of nature."

Of the large numbers of men who ventured in the ships of the seventeenth century many never again saw land. Similar mishaps overtook those who embarked on the uncharted sea of knowledge. Henry Oldenburg soon learned to discipline his desire to see all sails spread in voyages of intellectual discovery. In his early letters he implored Spinoza to publish his ideas in the teeth of malicious ignorance. "I adjure you," he wrote, "I adjure you by the bond of our friendship, by every duty of multiplying and spreading abroad the truth, not to withhold from us your writings." "I would by all means advise you," he wrote again, "not to begrudge to scholars the results at which with your mental sagacity and learning you have arrived both in Philosophical and Theological matters; let them be published, however much the Theological quacks may growl." It was the boldness of inexperience. Experience tutored him to caution.

As the correspondence proceeded, Oldenburg grew apprehensive. Presently he greatly dreaded the publication of some of Spinoza's views. In the end he sent this troubled request: "Allow me, I pray, to advise you out of your sincere affection for me not to include anything which may appear to undermine the practice of Religious virtue. Especially so since there is nothing for which this degener-

ate and wicked age seeks more eagerly than the kind of doctrine whose conclusions seem to give encouragement to flagrant vices."

Intellectual backsliding was not singular at the time. Many who were carried away by the intellectual *Wanderlust* of the age, quickly found the open sea too rough for their religious stomachs. A squall or two, and they sought refuge in the nearest haven of tradition, never thereafter to be tempted forth. Albert Burgh and Nicholas Steno were conspicuous members of this company. They began their careers as enthusiasts for the new learning, but made their reputations as uncompromising foes of science.

The first secretary of the Royal Society had special reasons for lapsing from his original impetuous devotion to the new enlightenment. War, the plague, a devastating fire, left the population of London nervous and suspicious, an easy prey to superstitious explanations. The Royal Society had to be circumspect in order to remain alive in this atmosphere. Moreover, Oldenburg was accused of disclosing political secrets in connection with his scientific correspondence. In consequence, he spent two months in the Tower. And he may have had fears for his own immortal soul as it became clear to him that the trend of science was materialistic.

But after all, no special explanation is needed to account for his deflection. Scientific diffidence with regard to "Religious virtue" was typical of the age. An avowed interest in the progress of knowledge seemed to endanger the spiritual interests of mankind. It was the normal behavior of the early scientists to stop short at the borders of revealed religion, and to exempt from scientific authority any belief or idea which could lay claim to religious sanction.

The root of the difficulty reached back to the medieval world, when analogous conditions brought about a similar bisection of knowledge. Thomas Aquinas, it is true, refused to separate the domains of reason and faith. He labored to bring together into one system the physical world, the world of divine grace, and the world of eternal glory. Henry Adams aptly said of him: "The hive of Saint Thomas sheltered God and man, mind and matter, the universe and the atom, the one and the multiple, within the walls of an harmonious home." This scheme ac-

accomplished two things. It protected the Church which had begun to suffer from philosophic speculation, and, by providing a place for the new knowledge which the revival of Aristotle gave rise to, it won a measure of freedom for speculative activity.

But the philosophic teachings of St. Thomas were not accepted by all thinkers. They were suspected of being hostile to the truths of faith. In fact the ingenious compromise of the Angelic Doctor hardly survived him. Duns Scotus, who was born probably in the year St. Thomas died, found it impossible for a critical intelligence to harmonize the deliverance of faith and reason. Church doctrines remained sacred and inviolable with him, but they were no longer included, together with what was known about the world of nature, in one rational system. The famous pupil of Duns Scotus, William of Occam, carried this tendency farther. He separated the two realms as by a chasm. Theological and philosophical truths were regarded by him as mutually contradictory.

No doubt this theory of dual truth was then and thereafter in some cases a disguise, conscious or unconscious, for a one-sided espousal now of religion and now of philosophy. Which it was in a specific instance it is impossible to decide without reading too much between the lines. What we know is that when an active spirit of critical investigation came to life in medieval scholasticism, the outcome was a division of knowledge into natural and supernatural, between which there could be no communication.

III

The rise of modern science in the seventeenth century revived and intensified the antithesis. In Giordano Bruno's speculations the attempt was once more made to bring secular learning and the teachings of the church within an inclusive vision of truth. But Bruno's tormented career, long imprisonment, and tragic death show how intense the conflict had become. His martyrdom by burning in 1600 threw a warning glare over the opening decades of the century and every venturesome thinker was aware of the risk he ran. A dilemma was thus created, big with prospective danger to established religion, and

with immediate danger to the scientific venture, which as yet had no intellectual or social prestige. Confronted by this dilemma, the early advocates of science either recalled the traditional irreconcilability of truths about physical nature and truths divinely revealed, or they invented it themselves.

Descartes, with whom modern philosophy begins, separated the material and the spiritual realms as the two poles of reality. He proposed to clear the ground by a thoroughgoing skepticism of all his beliefs, with the avowed intention of building up a view of things upon scientific evidence. But he refrained from extending his method of doubt to morality and religion. That there might be no misunderstanding of his intention, he explicitly announced his adherence to a moral and religious code the first maxim of which, in his own words, was "to obey the laws and customs of my country, adhering firmly to the faith in which, by the grace of God, I had been educated from my childhood, and regulating my conduct in every other matter according to the most moderate opinions, and the farthest removed from extremes, which should happen to be adopted in practice with the general consent of the most judicious of those among whom I might be living."

No one was more outspoken on this matter than Francis Bacon, who surely stretched the applicability of scientific inquiry as far as he believed it could be done. He, too, halted at what he called "sacred or inspired Theology." This, he insisted, should "be drawn up from the word and oracles of God, and not from the light of nature or the dictates of reason." His position is picturesquely stated in the concluding book of *De Augmentis Scientiarum*:

Now excellent king, since my little boat, such as it is, has sailed completely round the world of knowledge, both old and new (with how favorable winds and piloting let posterity judge), what remains but that I should pay my vows, now that I have at last ended my journey? Of course there is left sacred or inspired Theology. However, if I am to treat of that, I must get out of the little boat of human reason and transfer myself into the great ship of the Church, which alone is able to direct its course by the aid of a divine nautical needle. For the stars of philosophy which so far have nobly served to guide me, will then no longer suffice.

Bacon took pains again and again to emphasize this division of knowledge into two incompatible kinds, the one arrived at by cross-examining nature, the other dependent upon divine revelation. He went so far as to declare that "the more discordant and incredible some divine mystery is, the more is God honored if it is believed, and the worthier is the victory of Faith." Probably he agreed with the opinion of his clever young friend, Thomas Hobbes, whose terse statement, flavored with a dash of his habitual cynicism, has been found very quotable:

The mysteries of religion are like the pills prescribed by physicians for the sick, which swallowed whole, have the virtue to cure; but chewed are for the most part cast up again without effect.

These provisos may indeed have been diplomatic gestures to appease those in power. The Church was now alive to the danger of a tolerant attitude toward science, and the Church had a long arm. Independent thinking had to be cautious and keep out of reach. Those who took a chance cannot be blamed if they considered it wise to have an anchor to the windward in case the storm should increase to violence. And yet if one reads Descartes, Bacon, Hobbes, Galileo, or any scientist of the period, with the hope of seeing the world somewhat as they saw it, one hesitates to conclude that when they separate revealed truth from natural truth they do it with tongue in cheek. It is more probable that these early scientists did not fully appreciate the implications of their method and did not foresee—how could they?—the rapid expansion of science into every field. They were thinking of the material half of the world, being quite frankly dualistic as regards the whole of experience.

Pierre Bayle is a test case. In Pierre Bayle a passion for clear and distinct reasoning was combined with fervent solicitude for the best fruits of the religious spirit. He would surely have attempted a unification of the two had this appeared to be in any way possible. But he could only torture himself all his days elaborating sundry details of the dividing chasm. We may safely conclude, I think, that whatever motives of a peculiarly personal nature were influential in this or that individual case, the mind of the first scientific century was in this matter divided against

itself. There appeared to be no way of harmonizing the new and ever-growing knowledge of science with the truth that was the same yesterday, and today, and forever.

IV

There is perhaps no better introduction to the meaning of science in our time than the study of the scientific attitude of Francis Bacon. He is often said to have been of no scientific significance. It is customary to think of him as a cheerleader for science in the contest between science and scholasticism. His writings stand against this low estimate. Although he was not himself a competent experimentalist, nor even unusually well versed in the scientific knowledge of his time, he was a scientist in the whole temper of his mind: in his conception of nature, his adoption of objective experiment as the test of truth, and his vision of the scientific task. He was a far truer scientist than some whose laboratory genius has won them recognition as great scientists in the twentieth century, yet who quickly return to unscientific obscurantism when faced with ethical or religious problems. That he was almost utterly lacking in ethical dependability has often been pointed out. He did not hesitate to demean himself, to prostitute his talents or to betray his friends, if this promised to secure him advancement. But there was one interest to which he remained constant. He never proved false to science. To the advancement of science he gave his best through all the ups and downs of his career. Science never asked him to give what he did not have.

It is very doubtful that a more unemotional human being ever existed than Francis Bacon. He was as nearly pure brains as it is possible for a man to be. "Intellect," as Lytton Strachey has said, "not feeling, was the material out of which his gorgeous and pregnant sentences were made. It was the common factor in all the variations of his spirit." Kuno Fischer has accurately characterized him: "If there were a thermometer to measure the intrinsic force of human passions, we should find, in the case of Bacon, that the degree of warmth belonging to his heart stood very close to zero."

This lack of emotional warmth, which was responsible for his most flagrant defects of character and for that con-

spicuous trait which David Hume described as his "extraordinary facility in helping himself," also made him the more perfect intellectual machine. It fitted him the better to take part in what he called the "disinterested observation of nature." He exemplified in his own person the ethical neutrality of science; the recoil of science from every consideration of the wished-for or the ought-to-be; the concentration of science upon the study of what is, has been, or is bound to come. He was, as it were, science itself.

There may have been other reasons, in fact there were, why Francis Bacon insisted that religion and morality, truly conceived, lie outside the reach of scientific investigation. But the deeper reason, the reason that could not be taken away and have left him Francis Bacon, was his lack of interest in the evaluation of human aims. He was temperamentally aloof from conflicts that arise out of antagonistic ideals. The moral disillusion often resulting from vast commercial and material expansion did not touch him. His coldly intellectual nature stood aside from the aspects of life which deeply affected warmer personalities. He saw it as his task to champion the mastery of the world in its material aspect, not to help decide what men ought to do or be. What men ought to do or be was a question he handed over to "sacred Theology." Possibly he did not expect "sacred Theology" to provide an answer; at any rate it would not clutter up his laboratory mind. He would be left free to study facts and to discover the principles or laws which they exemplify. This was his real interest. He was clear in his own mind, and he tried to make it clear to all who could understand him, that it was his mission to follow the way of objective science and no other. He proposed to engage in no investigation which could not be carried on by the use of natural human reason. Thus he said:

This holdeth not only of those points of faith which concern the great mysteries of the Deity, of the creation, of the redemption, but likewise those which concern the law moral truly interpreted: Love your enemies; do good to them that hate you; be like your heavenly Father that suffereth his rain to fall upon the just and the unjust. To this it ought to be applauded, "NEC VOX HOMINUM SONAT"; it is a voice beyond the light of nature.

Francis Bacon epitomizes science in another respect. He thought of knowledge as power. He sought to know nature's innermost secrets in order to extend "human empire over all things possible." While he had no sympathy whatever with the demand for immediate practical applicability of every scientific discovery, he saw in *applied* science the ultimate justification of *theoretical* science. "Light-giving experiments," to use his own words, were valuable chiefly because they made possible "fruit-bearing experiments." Inspired as he was by such revolutionary inventions as printing, gunpowder, and the compass, which, as he said, had "changed the face and state of things in all the world," so that "no empire, no sect, no star seems to have exercised a greater command and influence over human affairs than have these mechanical discoveries," he believed that by the use of scientific method inventions and discoveries of all kinds might be made almost at will. Critically conducted experiments would disclose the laws of nature; knowledge of these would usher in an age of invention; invention of mechanical contrivances would enable mankind to win dominion on earth. "Man through the Fall," he declared, "lost both his state of innocence and his lordship over the created world. Both these can, even in this life, be partly repaired, the former by Religion, and Faith, the latter by the Arts and Sciences."

The idea in Bacon's mind was simple and clear. It was to domesticate the untamed forces of nature as wild horses had been domesticated; to put them into harness, hitch them to the human enterprise, invite mankind to climb in and ride away to wealth, health, and felicity. The vision of innumerable powerful horses champing at the bit was so entrancing that the question of driver and destination seemed hardly worth thinking about. "Only let man regain his right over Nature," he enthusiastically exclaimed, "let him be given the power: right reason and sound religion will teach him how to apply it." It did not occur to him that once hitched up, the horses might take the bit in their teeth and run away with the wagon, or that a reckless driver might seize the reins, tumble "right reason and sound religion" out on their heads, and gallop off to perdition.

One further circumstance must be considered if we are to get a fair picture of Francis Bacon as an embodiment of the scientific temper. It is the ambiguity of intention which disclaims, and at the same time asserts, supreme authority over the known. We have observed how sharp a line he drew between natural and revealed knowledge, and in what precise terms he excluded scientific method from questions of moral and religious evaluation. But this line of separation was then, and has been ever since, a convenient fiction, adopted either because scientific method was not yet prepared to study human beings in their entirety, or because organized religion would not permit men to be regarded as solely natural phenomena. The ultimate aim was nevertheless a complete naturalism. Everything was to be brought under "the light of nature." If the plan could be carried out, was the time not bound to come when nothing would seem to be known unless it was known scientifically? Was it not inevitable that science should little by little invalidate conceptions derived from "sacred Theology"? We in our day are aware that this has come to pass. And it was the logical outcome of Bacon's scientific ideal. This is shown in such paragraphs as this from his *Novum Organum*:

Again: some one will doubt rather than object; whether we speak of perfecting by our method Natural Philosophy only, or the other sciences as well, Logic, Ethics, Politics. But we certainly understand that what we have said refers to all: and just as the common Logic which rules Things by means of Syllogisms pertains not only to natural Sciences, but to all; so ours too, which proceeds by Induction, embraces all things. For we construct a History and Tables of Discovery as much of Anger, Fear, Modesty, and the like: or of the examples of civil affairs; and no less of the mental emotions of Memory, of Composition and Division, Judgment and the rest, as of Cold and Heat, Light, or Vegetation, or the like.

The program of science, as Bacon sees it, is therefore a sweeping one. Seeming qualifications and concessions are to be understood in relation to its prior claim. Psychology and sociology are to be scientific subjects; morality as found actually existing among men is a natural phenomenon, hence it too will be studied scientifically; even theology has a "natural" side, which brings it in that

respect under the authority of science. Scientific method is to be extended little by little over the entire field of knowledge.

Bacon was after all a lawyer. His client was scientific method. Every step he took was calculated to win the case for his side. He left it for the advocates of religion to protect the interests in their charge. That side was none of his affair. There was only one door which, to the end of his life, he declared must remain shut against science. It was the door to an inner holy of holies where man as a pure spirit may meet with God and receive the impetus and power to rise above nature. "For certainly," says Bacon in his famous *Essays*, "man is of kin to the beasts by his body, and if he is not of kin to God by his spirit, he is a base and ignoble creature."

This may sound like a reservation of great importance in favor of religion, but it really amounts to very little when put to the test. It is a treaty exempting the citadel of the spirit from attack while the army is busily engaged elsewhere. And like the treaties between nations that are based upon considerations of self-interest, it will be regarded as mere paper when the march of conquest leads through the protected zone. This is all that scientific neutrality regarding religion has meant or can mean in practice. Anything "of kin to God" is a scientific mystery. The rights of this mystery will be respected so long as they do not lie in the path of scientific progress. When they do, the fortress of theology will be taken, the mysterious holy of holies will be blown to bits, and man's "spirit" will march among the prisoners of science.

VI

Francis Bacon died more than three centuries ago and the question therefore is whether his attitude of mind is characteristic of contemporary science.

One fact lies in the foreground. Science is no longer the new learning. It is not true today, as he complained it was in his time, that the best brains are drawn into "sacred Theology," or into "the quarrelsome and thorny Philosophy of Aristotle," because it is there that the honors and emoluments are to be had. Science has prospered,

and scientific success, substantial and ubiquitous, is the distinguishing mark of the twentieth century. The marvels and wonders that swarmed half-formed in Bacon's excited imagination have been far surpassed by the marvels and wonders that are commonplace actualities to the present-day child. The technique which he thought of as the interrogation of nature, and which appealed so strongly to his lavishly gifted and intense, but narrowly concentrated, intellect, has been perfected by men of science and adapted to every field of inquiry.

It is as if Bacon's cold intellect, multiplied innumerable times, armed with instruments of astonishing precision and with engines of amazing power, had pushed aside every obstacle and captured the modern world; or as if the infant which he admired for its promise, had grown into a giant who is striding through the world exercising his muscle, as indifferent to ethical considerations as Bacon himself used to be.

Let us drop figures of speech and ask a matter-of-fact question. Are the ethical implications of contemporary science different from what they were in Bacon's mind?

As to scientific procedure there is only one answer. It is the merit of scientific investigation that it protects the investigator from extraneous influences. It is designed to lay bare the truth, no matter what it hurts, whom it hurts, or how it hurts. The deference paid to scientists is due in part at least to their unconcern for the ethical, aesthetic, or religious consequences of their experiments. This deliberate unconcern is rightly taken to be the negative side of a positive interest which is today what it has always been, the mastery of the world of fact.

It is this positive side, this determined, never-ending search in every nook and corner for knowledge of the way things really are and operate, which the informed layman looks upon as the innermost purpose of scientific activity. Of course the knowledge thus gained cannot but have a profound effect upon the beliefs and attitudes of those outside the scientific field, but this is a consideration which the scientist leaves out of account in his scientific work. He has, and is expected to have, one ideal, scientific progress, and one loyalty, to be true to scientific method. A scientific Polonius would say:

This above all: to thine own science be true
And it must follow, as the night the day
Thou canst not then be false to any man.

Science is ethically neutral in its processes but not in its results. It does things to man's world and his outlook. One of the things it does is to deprive the natural order of the kind of meaning which has long been deemed necessary to sustain an ethical or a religious spirit. This is, I know, not the universal opinion. Scientists and religious leaders can easily be found who deny the charge. Even so eminent a scientist as Max Planck declares: "Wherever and however far we look, we nowhere find a conflict between religion and natural science, but on the contrary complete agreement, and especially at the most decisive points." Another eminent scientist, H. Poincaré, said it in words of which all of us have heard at least the echo: "Ethics and science have their own domains, which touch but do not interpenetrate. The one shows us to what goal we should aspire, the other, given the goal, teaches us how to attain it. So they can never conflict since they can never meet." Poincaré believed truth alone to be beautiful and the search for it the sole end worthy of a man's activities. L. P. Jacks, an outstanding religious leader of Great Britain, expects the *seeming* conflict to be brought to end "*by each side resolutely going on with its own work*, the one of affirming truth against error, the other of affirming good against evil, making no attempt to force a verbal reconciliation, but confident that the deeper they get into their business the nearer they will approach one another, until finally they meet at the same point and discover that all along they have been serving the same cause and obeying the same master."

These optimistic views are offset by what is perhaps a more contemporary, and certainly a better supported, conviction. "The scientific mind," says Joseph Needham, a biochemist, "when it does face at last the meaning of the universe as a whole, can but assert that it has no meaning." A. N. Whitehead, a philosopher-mathematician, describes the world which physical science portrays, as "soundless, scentless, colourless; merely the hurrying of material, endlessly, meaninglessly." Julian Huxley, a biologist, calls it "A universe of appalling vastness, appal-

ling age, and appalling meaninglessness." Sir Arthur Eddington, a physicist, finds it to be a perpetually evolving complexity of fiery globes, in which the appearance of man was an unfortunate accident, "a trifling hitch in the machinery," a "bit of star dust gone wrong."

VII

We need not undertake to decide which of these descriptions is nearer the truth for scientists. There can be no doubt which it is in the mind of the public. The public mind is pretty well made up that from the standpoint of science the world is without meaning, not only the far-flung world of the astronomer and the physicist, but the nearer world of the geologist, biologist, and the rest. The steady pushing back of man's origin into the unimaginable past; the brutish nature of the struggle by which he is shown to have supplanted lower forms of life and his own kind; the purely physical-chemical stuff, or, at best, physiological stuff, of which everything human is said to be composed; all of this increases the difficulty of harmonizing the teachings of science with the customary ethical and religious beliefs.

The situation which has thus been brought about for men and women who, living in the modern world, feel that they owe allegiance to science and to ethical and religious ideals, is astutely pictured in Mr. Needham's stimulating book, *The Great Amphibium*:

In short, for the scientific worker ethical neutrality is an indispensable aim, and he must at all costs strive to attain it, but for the whole man it is by no means an unmixed good. It is as if the house of the spirit, which was previously inhabited by the genius of religion, always preoccupied about God, Man, the Good, the Holy, the Right, were thoroughly spring-cleaned, swept, and garnished leaving nothing but the empty rooms and bare walls of scientific ethical neutrality, whereupon seven other demons, all worse than the first, including war and pestilence, enter in and take up a permanent residence there.

Scientists seem to be about as nervous as anyone in these "empty rooms and bare walls of scientific ethical neutrality." Apparently it would comfort them to have at least the old religious mottos still in their places. The growing heedlessness of behavior noticeable in the world

makes them even more uneasy. They have done their best to popularize science and the propaganda has been enormously successful. It has destroyed the prescientific innocence beyond repair. Of course no one intended that scientifically adolescent mankind should indulge in sowing wild oats, but that is the most generous construction to be put upon what has happened. Scientists, I say, seem to be as much disturbed by this unhappy outcome as anyone.

But they cannot be very deeply disturbed, not as a rule. If they were they could not be satisfied to make a superficial examination of the situation. Let the reader study what the scientists say. Let him take the best examples, some discussion of the problem like Max Planck's in his lecture, *Religion und Naturwissenschaft*. Its solemn tone and abundant learning will not escape him, nor the broad outlook and the civilized spirit of the lecturer; but I do not see how he can be impressed, even moderately, by the solution which is finally offered. For according to Dr. Planck the answer is simply this. The *Unknown* which the various religions try to bring nearer by means of visible symbols is the very same *Unknown* which the natural sciences approach through their analyses of the objects of sense. Religion and science are therefore allies in a common battle, the battle against skepticism and dogmatism, against atheism and superstition, and their joint battle cry must always be, as it has always been, "Forward to God!"

For my part, I say frankly that this seems to me plain hocus-pocus. No one could be deceived by it for a moment if the problem and the solution were transferred to everyday life and translated into everyday terms. How would it sound if put in this way? No one can tell where your road leads to; no one can tell where my road leads to; which proves that they both lead to the same place. You and I are fellow travelers who refuse to stop anywhere but in the city the whereabouts of which are unknown. Hence our slogan must be, as it has always been, "Step on the gas!"

Mr. Needham's proposal seems to me in this respect much to be preferred. It at least sets forth with inescapable clearness the alternatives to which he believes man is reduced:

We shall do better to follow each road out to its farthest end, and to accept the Lucretian estimate of the world in the laboratory as well as that of St. Augustine or St. Teresa at other moments and in other places. All are alike partially false, none means exactly what it says, save only that of philosophy, which, unfortunately, can say practically nothing.

This much of our answer, then, we can make to our matter-of-fact question. The meaningful whole of things, in which formerly the life of mankind had a meaningful place, has gone to pieces under the impact of scientific advance. Not only has this happened, but the very hope of finding a meaning of that kind now appears to be irrational.

Science has exerted another influence which, although it has scarcely received any attention, is probably the most profound as it is the most subtle, of those which have weakened ethical and religious aspiration. Thousands of capable men and women are engaged in scientific occupations that demand the utmost possible degree of ethical neutrality. Their work is made known to the young in schools and colleges, and through every means we have of informing adults, and they are honored for the work in which they are engaged. There can be no question that in this way "scientific ethical neutrality" has had at least a double effect. Even in the popular mind it has freed from the authority of moral judgment an extensive area of experience which required such freedom, and its influence has spread to areas where ethical distinctions are in some sense imperative, and there has tended to blur or eradicate all distinction between right and wrong conduct.

This much of the answer we have. It shows the relentless destruction of the foundations of traditional religion. Yet we are asked to reaffirm in our day the treaty between science and religion which guarantees to each a complete autonomy in its own sphere, as if history could teach us nothing. This is one of those superficial compromises which only postpones the day of reckoning.

VIII

If *theoretical* science has reshaped man's conception of the world, of himself, and of human destiny, *applied* sci-

ence has been even more influential. Applied science comes home to everyone no matter what his stage of intellectual development. It is applied science, too, that is recognized to be the possible instrument of incalculable evil. This possibility has received a good deal of attention especially since the application of science to warfare has reached its present diabolical efficiency. . . .

Today, however, there is nothing incredible or even conjectural in such statements as Julian Huxley recently made:

The problem of what man will do with the enormous possibilities of power which science has put into his hands is probably the most vital and the most alarming problem of modern times. At the moment, humanity is rather like an irresponsible and mischievous child who has been presented with a set of machine tools, a box of matches, and a supply of dynamite.

Perhaps there should be encouragement in the fact that the problem has intruded itself upon the meetings of the British and the American Association for the Advancement of Science. Presidential addresses before both associations have considered the social implications of scientific development. In these addresses, as in those delivered before great religious bodies, thoughtful men have asked, almost in the words used by Edwin Grant Conklin in his address as retiring president of the American association: "Will science, which has so largely made our modern civilization, end in destroying it? Has it not placed powers in the hands of ignorant and selfish men which may wreck the whole progress of the race?"

At a meeting of the British association, before a brilliant audience which, according to newspaper accounts, suggested a first night at the opera, and which not only packed a modernistic motion picture theatre but overflowed it so that arrangements had to be made that the address might be heard by hundreds in a near-by hall, Lord Rayleigh absolved science of all blame for its abuses. On Sunday some 1,500 members of the association, many in vividly colored academic robes, attended services at Great Saint Mary's Church to hear the Bishop of Winchester. The bishop declared modern civilization to be largely a failure, but he thought it illogical and unjust to attribute this deplorable fact to science. He ascribed

it to lack of character in those who made use of science. "Man as he is at present," he said, "is incapable of using wisely some of the best gifts of science, as a child is incapable of using a sharp knife."

The constant recurrence of this idea is not reassuring. It demonstrates, I fear, that no practical solution is to be looked for from these otherwise commendable efforts. For it is not bad men or bad impulses that have made or now make scientific achievement potentially dangerous to humanity; it is the warp and woof of modern life in which we are all implicated, with our goodness and badness and indifference, our ambition for worldly success and our idealisms. It is scientific civilization that we have to manage in the human interest, not this or that individual or group that happens to have run amuck.

To see the problem in these more difficult proportions seems to me a first step toward its solution, if indeed there is a solution. A truer appreciation of our state than is shown in the usual declarations of great scientists and great religionists I find in E. B. White's "Hymn to the Dark," printed in *The New Yorker*:

This is the prelude to darkness, this great time
Of light and war and youths who follow Hate
Shaped like a swastika, sadist economies,
The dominance of steel and the sword stainless,
The dissenting tongues cleft at the root and bleeding,
Singers with their throats cut, trying
(While yet there's time) to point out where the venom is,
Ink never drying
On the insatiable presses,
Science triumphant, soy beans more than edible,
And the stud chemist, with his lusty pestle,
Serving the broodmares of hysteria,
Getting the gases and the incredible
Sharp substances of our enlightened dying.

This is the light that failed. Oh Christ,
Make us an end of light if this be light,
Make us an end of sound if this ethereal
Babble, caught in the glowing tubes, translated into waves,
Be sound. If darkness comes, let the dark be
Velvet and cool . . . kind to the eyes, to the hands
Opened to the dust, and to the heart pressed
To the rediscovered earth, the heart reclaimed
For the millionth time by the slow sanity
Of the recurring tides.

Yes, I find in these verses a sense of where we are and what we face that I miss in learned disquisitions which as a rule show strong attachment to a vested interest but are not touched by human tragedy. Without this sense of dread or horror to begin with, no improvement of the situation is conceivable. Nevertheless, bitterness of spirit is not enough. Turning away in disillusionment will not help us out, if help is to be had. We must seek for a more positive way of meeting the difficulty.

Francis Bacon and the early scientists, as we saw, aimed "to extend more widely the limits of the power and the greatness of man." They were thinking primarily of mechanical power, which they lacked and which we have in abundance. If we, too, need to extend more widely the power and greatness of man, it is in order that the very success of their venture shall not contribute to our ruin.

Refusing to call a reality by its appropriate name, calling it an appearance instead, makes no difference to reality. Reality is not thin-skinned. It does, however, make a difference to the one who thereby deceives himself as to the nature of the world in which he lives.

THE HUMAN ENTERPRISE

CHAPTER 5

Scientific Method and the Good Life*

I

The social problems resulting from the wide dissemination of scientific knowledge are problems of peculiar difficulty. Possible solutions are not easy to think of and harder to put into effect. They are problems of such importance, however, that every opportunity to see them more clearly must be taken advantage of.

It would help us all, in the first place, to clarify our conception of science by doing away with a number of vital errors. One of these is a confusion between science as it actually is, and the aura of myth and legend which envelops it. Popular science is not science as conceived by the scientist. It has a good deal of magic and the miraculous about it, and very little of the scientific temper. Belief in science may even be a form of superstition. For superstition is a frame of mind. It is a manner of believing, far more than it is this or that belief. The attitude of many people toward institutionalized science is not unlike the superstitious credulity of the average medieval man or woman toward institutionalized religion. They believe in Science and in what scientists tell them, very much as their ancestors believed in the Church and what they were told by their priests.

There is abundant reason why this should be so. A man cannot read a newspaper or listen to a radio without being told of ideas emanating from science which he can only accept on faith. His mind is bombarded by half-understood scientific pronouncements which are advertised

* From *The Human Enterprise* by Max C. Otto. Copyright, 1940, by Appleton-Century-Crofts, Inc.

to have the profoundest bearing on his life, the truth of which he is unable to determine. "Freud Explores Unconscious Mind and Finds Only Sex Impulse," "Pavlov's Dog Proves Mind is Matter," "Sodium Amytal Cures Insanity," "Napoleon's Career Explained by Abnormal Pituitary Glands"—such are the things he reads and hears. Science has discovered ballistics; science has invented the lie-detector; science has produced the unbeatable G-man; so on and on. Commercial institutions assure the public that after years of scientific research, at enormous expense, they have produced a perfect article. Men of science are drawn into the advertising game. They feel they must give the outcome of their research to the public in spectacular form. Leading scientists write hair-raising mystery stories about the cosmos. Religionists join the hue and cry on behalf of a scientific religion.

It must be remembered too that, seen from the outside, science has its sacred buildings, its mysteries, its esoteric language, its priests and acolytes, even its incantations and mummeries. To get on the inside takes years of preparation, a ceremony of initiation, disciplined training, and adherence to a conception of things in which much is sacrificed that is dear to ordinary mortals. To the layman, the whole business is beyond comprehension; something for the mind, if not the knees, to bow down to. This superstitious awe unquestionably interferes with an intelligent appreciation of science.

Another false notion could be dissipated with profit. Much trouble might have been saved had the noun "science" never come into use, had everyone learned to use instead a verb like sciencing or scienced. We are all in the habit of believing that a *thing* must somehow exist corresponding to every noun in the language. When people speak of science, or hear it spoken of, they do not think, except incidentally, of busy scientists and their science-making and science-preserving activities. They think of something above and beyond all this, a huge *entity* which has an independent existence of its own. Science is a kind of metaphysical mother, wooed by men of science and giving birth to a mighty progeny of atoms, molecules, chemical elements, and laws of nature, not to speak of vitamins, electric light bulbs, radio tubes, yeast cakes, breakfast foods, and cosmetics.

Now in this sense science has no existence outside the mind of its fabricator. What we actually have are laboratories and organizations, instruments and apparatus, a systematic technique of investigation, an army of workers, and an accumulation of tested knowledge. One may think of these in their interrelation and refer to them as a whole. In fact it would be awkward not to be able to do so. But there is always the danger that a generalization of particulars will take on substantial form. This is exactly what has happened for most of us in respect to the particulars of science. Science has become a thing, a super-human thing, a deity or devil, depending upon who the person is and what he is most interested in doing.

It would put us a considerable distance forward if the word science spontaneously and naturally called to mind men and women engaged in certain kinds of investigation, using a special kind of method to achieve a special kind of result.

II

This much of the task is surely not insuperable. The distorting mists of fabulous science can be blown away, leaving a clearer view of scientific method and scientific knowledge. We are capable of realizing that science is a company of investigators, able, highly trained, and well equipped, but still human beings, tempted in all points like as we are, yet without emotional sin.

Let us assume this much to be done. Several tasks of greater difficulty remain, one of which is liberation from the notion that science is limited to a specific type of subject matter. Or, to state the error in another form, that the more abstract the subject matter is with which an investigator deals the nearer he approaches to ultimate reality. A number of serious consequences follow from this misinterpretation. It impels the scientifically-minded investigator to believe that no matter what he is investigating, if he wants authentic results he must reduce his material as nearly as possible to the basis of mathematical physics. It discourages the development of a rigorous experimental technique which is applicable to processes in their concretely experienced form. It casts suspicion upon the reality of the world in which every man and woman

must live, the world he sees and touches, and in relation to which he will succeed or fail.

For a long time the discoveries of physical science, shocking though they were to certain beliefs in the supernatural, did not ruffle the world's substance. Solid bodies, however small, acting on each other according to fixed laws of causation, remained the substratum of things. Recently this firm materiality has fallen to dust in the hands of the physicists. To less than dust, as General Smuts has described this scientific revolution:

With the coming of the twentieth century, fundamental changes began to set in. The new point of departure was reached when physical science ceased to confine its attention to the things that are observed. It dug down to a deeper level, and below the things that appear to the senses, it found, or invented, at the base of the world, so-called scientific entities, not capable of direct observation, but which are necessary to account for the facts of observation. Thus below molecules and atoms still more ultimate entities appeared; radiations, electrons, and protons emerged as elements which underlie and form our world of matter. Matter itself, the time-honored mother of all, practically disappeared into electrical energy.

"The cloud-capp'd towers, the gorgeous palaces,

The solemn temples, the great globe itself:
Yea, all the material forms of earth and sky and sea were dissolved
and spirited away into the blue of energy.

And there is always Sir James Jeans to quote: He is responsible for the statement that physical science is rapidly "moving toward a hypothesis which will cover all known facts with complete accuracy—if indeed it has not already attained such a goal," and when this feat is accomplished, physical substance will have been dissolved into pure thought. Assuming that the books written by Sir James to popularize his ideas were not only bought but read, many thousands of people are aware that according to this advertised "last word in contemporary physics," the content of experience is stripped of all material covering, and naked reality is seen through a thin veil of mathematical symbols.

Sir Arthur Eddington's view is more cautiously stated. According to him the scientific observer has dispensed with the sense of smell, hearing, and touch. He has only one eye, since he has no need for stereoscopic vision. From his one eye all of the retina but a small patch has been removed, so that he can no longer recognize form, size

gradations of light and shade, and can see in but one direction at a time. He can determine whether an opaque object is in a certain position or not, and whether two objects are in apparent coincidence or not, and this happens to be enough for the purpose of studying the physicist's reality. "The point is," says Sir Arthur, "that all our knowledge of the external world as it is conceived today in physics can be demonstrated to him. If we cannot convince *him* we have no right to assert it." The rest of our kaleidoscopic world is pure fiction, due to the inveterate story-teller in man's brain. It is of no interest to the physical scientist.

Spokesmen for science, to be sure, rarely stand by their impoverishment of reality to the bitter end. They only remove the *foundation* of the common-sense world view; the superstructure is to remain and, so far as they are concerned, may be mistaken for reality by the uninformed. The "spiritual" demands of men are to be satisfied too. Scientists are among the most conservative defenders of traditional religious symbols and practices. There is nothing in the least unusual in General Smuts's position when, having indicated how science has dissolved "all the material forms of earth and sky and sea," and spirited them away "into the blue of energy," he says: "The world consists not only of electrons and radiations, but also of souls and aspirations. Beauty and holiness are as much aspects of nature as energy and entropy. An adequate world view would find them all in their proper context in the framework of the whole."

Everything depends upon how this is to be taken. General Smuts means it to be taken radically, in a way that modifies even the interpretation of the world by physical science. As a rule however, it simply means that you may believe anything else you please, providing you accept the world view of physical science as supreme. And this is to sell all other views down the river. No such compromise, whether the scientist needs it for himself as a man, or thinks it is needed to restrain the brutishness of the multitude, will stand the strain put upon it in the contemporary world.

It would be silly for the man in the street to dispute these interpretations of reality in the realm of physics; but in his own realm, the world of daily experience and

practice, he has the right to speak. And it is significant that to speak with authority there where he is at home he must forget what the physicist tells him. Moreover, shall we not remember that when the physicist works in his laboratory he has the good solid floor under his feet, and that it is still under his feet if he goes to the window and becomes absorbed in what goes on outside? Well, in the same way he has the good solid floor of the observable world under him when he dares to lean far out over the parapet of the senses.

It is rumored that the most revolutionizing concept of physical science, which does away entirely with stufflike entities, reducing them all to configurations in space-time, could never have been reached without reliance upon ordinary pencil and paper. I am not trying to be funny, nor do I mean to imitate Dr. Johnson who believed that by kicking a stone he had disposed of Berkeley's doctrine that so-called matter is idea. I am repeating what was said in earlier chapters. The kaleidoscopic, teeming, visible, and tangible world is pre-eminently the form which reality takes for us all, and the man in the street is well advised if he holds to his natural conviction that he has every right to this standpoint.

When an artist paints a winter landscape, we do not admire it as a proof of the unreality of spring. Neither does he. He is satisfied if his picture stirs in the beholder a lively sense of winter. When a woman gathers beach plums in autumn, lets them simmer on the stove, presses out the juice and makes it into jelly, we do not accept the jelly, to say nothing of the pulp she has left, as evidence that the wild fruit on the branches was an illusion. Neither does she. She is pleased if her conserve adds a piquant accent to the roast. Why then should we surrender our common sense and believe that the intellectual product which the physical scientist extracts from life's fullness is more real than the living fullness from which he extracted it?

III

If the differentiating mark of science is not to be found in a peculiar subject matter, in what is it to be found? In method or technique. Taken comprehensively science de-

notes scientific workers, the institutions and organizations engaged in furthering scientific work, and the technique of observation and demonstration usually referred to as scientific method. It is this technique or method which may be regarded as most representative. All other aspects of science take their character from this methodological side. Workers, apparatus, organizations, accumulated results are scientific insofar as they are involved in the scientific technique and for no other reason.

It is sometimes maintained that science requires that the subject matter of investigation permit of a strictly quantitative examination. If this characterization is adhered to, scientific method is restricted to one type of subject matter only. It is excluded from all investigations where qualitative distinctions must be dealt with, from all studies of life phenomena, sense experiences, ideas, feelings, purposes, evaluations, and the like. The permissibility of limiting the definition of science in this way is very questionable. At any rate, we shall assume that science may be more fairly and at the same time more intelligently defined in broader terms. So defined, the indispensable characteristic, as we have seen, is not to be found in *the peculiarity of the material or subject matter under investigation*, but in the *particular way the material or subject matter is dealt with* whatever it may be.

What then is scientific method? Stated in the fewest possible words, it is a way of investigation which relies, and relies solely, on disciplined empirical observation and rigorously exact proof. Its aim is objective verification. And by objective verification is meant, first, that the investigator's wishes and wants, his aesthetic, moral, or religious predilections, his faith in or desire for a particular conclusion, have been carefully eliminated as determining factors; and second, that proof extends beyond inner or personal conviction, to outer or public demonstration. The extent to which this can be done depends upon the matter to be investigated. But whatever the problem may be, it is possible to devise a technique which assures the highest attainable degree of objectivity as just defined; and whenever this is honestly attempted the investigation is scientific in the comprehensive meaning of the term. The significance of objectivity sought in terms of method instead of subject matter is obviously far-

reaching. Its relevancy to the problem of a socially responsive and a socially responsible science need not be pointed out.

IV

This brings us up squarely to the most deeply embedded misunderstanding of the scientific venture. Unless something can be done to correct this error we may as well give up. I refer to the belief that science consists in the "selfless pursuit of truth." It seems to be agreed on all hands that the truth about the world in which we live must be sought no matter what happens to mankind, and that science is the one perfected method of seeking it. Max Wertheimer has said: "Science is rooted in the will to truth. With the will to truth it stands or falls. Lower the standard even slightly and science becomes diseased at the core . . . The will to truth, pure and unadulterated, is among the essential conditions of its existence." Thinking people accept this statement without qualification. But it has to be qualified, or, rather, it has to be taken in one sense and not in another, or it is false. . . .

"The will to truth, pure and unadulterated." If the meaning intended is that the scientist must will to reach the truth *as such*, as it exists in and of itself, then, judged by his behavior, no scientist ever seeks truth of this kind. If, however, the meaning is that scientists are committed to the use of the most highly developed method of investigation and the most rigorous test of what is true with regard to given data, and that the scientific worker must exercise the utmost care not to allow feelings or desires, his own or those coming from anywhere, to have the slightest influence in determining the conclusion at which he arrives—if this is what is meant, there can be no question that science stands or falls with "the will to truth."

The antagonism reported to have been shown by the Nazi leaders—Dr. Joseph Goebbels, Alfred Rosenberg, Bernard Rust—toward the alleged "Jewish" physics of Einstein, Heisenberg, von Laue, Planck, or Schrödinger, and the substitution in its place of the "German" physics of Willi Menzel, Johannes Stark, Philipp Lenard, on the ground that science "is conditioned by race and blood" would, if carried through, have made an end of scientific

investigation from top to bottom. If we are correctly informed that in Russia certain fields of research are "officially neglected," this, too, endangers science. So does the granting of funds, as is sometimes done in America, for the specific purpose of coming to a predetermined conclusion. We may go farther and say with H. Levy, there must be "an 'unplanned zone' in every field, to give scope to human originality and initiative." Science requires, among other things, free play for intellectual curiosity, the privilege of learning all one can about anything one happens to be interested in, without feeling obliged to arrive at any set conclusion whatever, to say nothing of any prescribed conclusion.

Loyalty to exact method is the absolute minimum. But this exactness of method is not a "selfless pursuit of truth." It is not even necessarily a *disinterested* pursuit of truth, free from all purposes other than its own pure continuance. One reason why it is not was presented in the chapter just mentioned. Here we take note of another reason. We watch investigations as they are conducted. Do they lose their scientific character the moment they are initiated by the desire for an answer to a particular question? Obviously not. Scientifically trained youths by the hundreds are annually absorbed into industry, and are employed on industrial research projects, without ceasing to be scientists in spirit or workmanship. Scientific experiments are continually undertaken to discover more effective poison gases, more powerful explosives, improved means of protection in warfare. Scientific medical studies have for many years been directed toward securing better physical and mental health. In fact, unless science is defined with extreme narrowness, the association of strict scientific procedure with human and social programs is an outstanding characteristic of our age.

Furthermore, are all scientists moved by only the highest motives? Are there not scientists, who knows how many, whose predominant ideal is something less noble than the disinterested search for truth? They do assigned research jobs or they follow a trail they have hit upon, with no higher thought than to advance in their profession. Not that professional ambition is in itself disgraceful, but it is no more lofty as a motive in a scientist than in anyone else. As a class, scientists show a very superior

"will to truth," an unusually strong determination to explore the unknown, and the most delicate sense of honesty in reporting what has been found true and what not true. But this is far from saying that science is a vast beehive, and all scientists are worker bees, roving far and wide to provide man with the honey of pure truth.

v

Scientific activity is influenced by subtler forces. Erwin Schrödinger has written of these in *Science and the Human Temperament*. I know of no one better qualified to speak on this difficult theme. The upshot of his study is that a hard and fast line cannot be drawn between subjective ways of apprehending reality in painting, literature, music, social and political ideas, and the objective way of apprehending reality which we have in the body of truth furnished by the sciences. Every one of them is in some manner molded by the human temperament.

This temperamental interference with objectivity is of course most obvious in the humanistic sciences. The historian, for example, must go beyond the discovery and narrative of bald fact. It is his task to weave historical events into a meaningful pattern. As Mr. Schrödinger points out: "It is here that scientific history begins, while the work of the conscientious chronicler is looked upon as merely furnishing the raw material." And "The selection which he makes from the raw material at his disposal, his formulation of it, and his final presentation must necessarily be influenced by his whole personality." This is true of all humanistic sciences. There is always the ideal of maintaining the greatest degree of objectivity, and always the intrusion of the subjective element of human creativeness.

But does the same observation hold of the nonhumanistic sciences? Are there subjective elements in physics, the exactest of the sciences? Yes, there are. Let us see how they enter. "From all physical research," says Mr. Schrödinger, "the subjective intrusion of the researcher is vigorously barred so that the purely objective truth about inanimate nature may be arrived at. Once this truth is finally stated it can be put to the test of experiment by anybody and everybody all the world over, and always

with the same result." Human subjectivity, then, does not enter into a properly conducted experiment when this has been set up.

Well, when does it enter, if not into the scientific experiment? It enters into the setting up of the experiment. This always takes place within the general structure which the science has assumed up to that time. The data which are accepted as working materials are furnished by previous experiments. The number of such experiments, Mr. Schrödinger admits, is undoubtedly very large, but "it is infinitesimal when compared with the number of experiments that might have been carried out, but never actually have been." The data worked with are therefore selected data. These "data represent results that have been achieved by former researches. These results are the outcome of selections formerly made. Those selections were due to a certain train of thought working on the mass of experimental data *then* at hand. And so if we go back through an infinite series of stages of scientific advance, we shall finally come to the first conscious attempt of primitive man to understand and form a logical mental picture of events observed in the world around him." Such facts cause this eminent physicist to say: "All this leads to the inevitable conclusion that we cannot close the door to the entry of subjective factors in determining our scientific policy and in giving a definite direction to our line of further advance."

This general statement is amply supported by facts. For instance: Grimaldi, who was a boy when Francis Bacon championed inductive science before the world, anticipated some of the latest theories in Quantum mechanics. Heisenberg's experiments, in our time, were attended to and followed up; Grimaldi's in his time, were not. Mr. Schrödinger explains why this happened:

They were regarded as pointing to a phenomenon which had no general interest for science as such, and for the following one hundred and fifty years no similar experiments were carried out, though this could have been done with the simplest and cheapest material. The reason for this was that, of the two theories of light which soon afterward were put forward, Newton's corpuscular theory gained general acceptance against the wave theory of Huygens, and thus the general interest was directed along a different path.

To these subjective interests which are internal to science are to be added the influences of the cultural trends in the world at large. The most impressive chapters in *Science and the Human Temperament* are those which discuss the question "how far the picture of the physical universe as presented to us by modern science has been outlined under the influence of certain contemporary trends which are not peculiar to science at all." Impressionism, simplicity of design, freedom from the control of rigid law, relativity, endless change, these are some of the trends that dominate our arts and crafts, our politics, and our industrial and social organizations. According to Mr. Schrödinger, similar influences are definitely felt in contemporary physics. And he should know. Scientists, he contends, "are children of their age." The scientist "cannot shuffle off his mortal coil when he enters his laboratory or ascends the rostrum in his lecture hall."

The argument must be read in its completeness to be fully appreciated. I am acquainted with no book which the student of the subject in hand can so ill afford to leave unread as this one by Mr. Schrödinger, published by W. W. Norton and Company. Those who read it will, I believe, find the statement arresting with which we must leave the subject of science as the "selfless pursuit of truth":

From all this it follows that the engaging of one's interest in a certain subject and in certain directions must necessarily be influenced by the environment, or what may be called the cultural milieu or the spirit of the age in which one lives. In all branches of our civilization there is one general world outlook dominant and there are numerous lines of activity which are attractive because they are the fashion of our age, whether in politics or in art or in science. These also make themselves felt in the "exact" science of physics.

VI

Einstein is said to have approved as a brief definition of relativity the sentence: "There is no hitching post in the universe—so far as we know." That may be true of the universe as conceived by the mathematical physicist. But there are hitching posts in the world of daily experience, and it is important that we tie up to the right ones. Why should the most objective thinking we are capable of not

help us to determine which these are? Some of us like to believe that General Smuts is right in promising that this is what the science of the future will do by broadening its vision of the facts that can be scientifically studied:

Our scientific world-picture will draw its material from all the sciences. Among these, physical science will—in view of its revolutionary discoveries in recent years—be a most important source. But no less important will be the contribution of the biological sciences with their clear revelation of organic structure and functions as well as of organic evolution. And last, not least, the social and mental sciences will not only supply valuable material, but especially methods of interpretation, insights into meanings and values, without which the perspectives of our world-picture would be hopelessly wrong.

It is gratifying to have J. S. Haldane, without apology to anyone, declare: "Neither biology or philosophy can afford to cringe before the physically interpreted or mathematically formulated universe"; and H. S. Jennings, with equal frankness: "It is important to realize, what is often forgotten, that such limitations of the field of science must make the picture of reality that science attempts to give incomplete and therefore misleading. Whoever excludes from science any class of data of experience thereby proclaims that science cannot present an adequate picture of reality." Julian Huxley takes us even farther in his *Scientific Research and Social Needs*:

Personally, I know that looking at science in its relation to social needs, as I have had to do for this survey, has cleared my own mind a great deal; and if the scientific movement in this country can do this and become conscious of itself, and of its limitations, and of its relation to the economic driving forces of society, that will be a very valuable step. The chief moral of this book, it seems to me, is that science is not the disembodied sort of activity that some people would make out, engaged on the abstract task of pursuing universal truth, but a social function intimately linked up with human history and human destiny. And the sooner scientists as a body realize this and organize their activities on that basis, the better both for science and for society.

These remarks, which I have quoted because they were made by scientists, suggest that the sciences are specialized types of activity; that they are the outcome of varying degrees of methodological selectivity and intensity; and that they belong, singly and collectively, within the circle of

that larger whole of experience to which human beings respond. In other words, the sciences are potential means in the service of human life, the most extraordinary means yet invented; they are not ends to which man's life must, for some unaccountable reason, be offered up.

Why talk as if truth were God? If we must exclaim with Job, "Though he slay me, yet will I trust in him," let us remember the rest of the verse, "but I will maintain my own ways before him." The desire to know is one among a number. It is no more final than another. Indeed our primary desire is to make what we can of life. That is why we want truth. We believe it will help us. And it will, providing it is the kind that can. It will help us providing it is truth related to our need, or better said, *truths* related to our needs. We do not know too well what these needs are, consequently it would be ruinous to look for only the truths that promise to advance the desires which at any time we happen to have. We are unavoidably pushed into the semidarkness where our needs are only dimly seen, and into the dark where they are not visible at all. It is precisely there that we stumble because we lack the light of knowledge—which proves the importance of knowing what we are about, and proves no less, the primacy of the desire to make what we can of life.

Some among us can afford to seek truth for the fun of it. Mankind can well afford to accumulate some kinds of knowledge without reference to its utility. But if this is to be the ideal toward which all of us must strive; if we must seek to know only for the sake of knowing, letting the consequences be what they may; then a poet unknown to me has said the last word:

Truth is a rope.

It runs from the straining hands of man
Up over a beam in the foundations of infinity,
And binds its other end around his neck,
Making of him as he stubbornly climbs from the earth
His own inescapable hangman.

VII

From these considerations of science as method and of the world picture it leaves upon the mind, we revert once more to applied science. Take a single aspect of the prob-

lem, the effect on society of the results of industrial research. . . . The "producer bias in research," as it has been called, has developed rapidly since 1914. Julian Huxley has well said: "There ought to be much more research organized for the consumption end—directed towards the needs of the individual citizen as an individual and as a citizen." There ought to be "a replacement of the present socially irresponsible financial control by socially responsible planning bodies."

The question was discussed by Sir Josiah Stamp as president of the British Association for the Advancement of Science. The results of research, he reminded his hearers, "these scientific infants, duly born and left on the doorstep of society, get taken in and variously cared for, but on no known principle, and with no directions from the progenitors. . . . These things just 'happen' generally under the urge of profit, and of consumers' desire, in free competition, regardless of the worthiness of new desires against old, or of the shifts of production and, therefore, employment, with their social consequences."

No excuse is necessary for quoting three paragraphs from his trenchant presidential address, "The Impact of Science upon Society":

In some ways we are so obsessed with the delight and advantage of discovery of new things that we have no proportionate regard for the problems of arrangement and absorption of the things discovered. We are like a contractor who has too many men bringing materials on to the site, and not enough men to erect the buildings with them. In other words, if a wise central direction were properly allocating research workers to the greatest marginal advantage, it would make some important transfers. There is not too much being devoted to research in physics and chemistry, as modifying industry, but there is too much relatively to the research upon the things they affect, in physiology, psychology, economics, sociology. We have not begun to secure an optimum balance. . . .

Apart from the superior tone sometimes adopted by "pure science" towards its own applications, scientific snobbery extends to poor relations. Many of the hard-boiled experimental scientists in the older and so productive fields, look askance at the newer borderline sciences of genetics, eugenics and human heredity, psychology, education, and sociology, the terrain of so much serious work but also the happy hunting ground of "viewy" cranks and faddists. Here the academic soloist is still essential, and he has no great context of concerted work into which to fit his own. But unless progress is made in these fields which is comparable with the golden ages of discovery

in physics and chemistry, we are producing progressively more problems for society than we are solving.

What we have learnt concerning the proper impact of science upon society in the past century is trifling, compared with what we have yet to discover and apply. We have spent much and long upon the science of matter, and the greater our success the greater must be our failure, unless we turn also at long last to an equal advance in the science of man.

It would be unjustifiably optimistic to conclude that these are the sentiments of the majority. Most scientists are still on the other side. They do not feel any obligation to help toward a better co-ordination between scientific and social progress. They demand perfect freedom of research, and "the public be damned." As if it were the chief end of man to glorify the scientist and enjoy him forever.

Do they not know to what harmful uses science may be put? They do. But they blame any bad outcome on "men of evil will," on the "military intelligence," on "the forces of disunion, envy, hatred, and malice, which are always walking up and down the world," and which find in certain scientific discoveries "a little corner admirably adapted for them to lay their eggs in."

Joseph Needham, who wrote the words just quoted in defense of science, wrote something that seems to me to go much deeper, so much deeper indeed that I know of no way to bring the two ideas into harmony:

The best man is the man who is friendly to, even if he cannot himself enter into, each one of the great forms of human experience, and the worst man is the man who is willing and desirous of throwing all but one form of experience on the scrap heap.

Willing and desirous of throwing all but one form of experience on the scrap heap—there are scientists, as there are businessmen, college professors, ministers of religion, not to mention those who have nothing to do but try to have a good time, whose scheme of life comes to no more than that. Nevertheless the number of scientists who are ready to share in the responsibility of preventing the discoveries of the scientific worker from oppressing mankind is larger than it used to be. I have quoted from addresses which speak for this tendency, and here add a paragraph of peculiar forthrightness from the most recent publication on the subject which I have seen. It is from a paper,

"Science, Religion and Social Ethics," by Sir Richard Gregory, Bart., the retiring editor of *Nature*:

The view that the sole function of science is the discovery and study of natural facts and principles without regard to the social implications of the knowledge gained can no longer be maintained. It is being widely realized that science cannot be divorced from ethics or rightly absolve itself from human responsibilities in the application of its discoveries to destructive purposes in war or economic disturbances in times of peace. Men of science can no longer stand aside from the social and political questions involved in the structure which has been built up from the materials provided by them, and which their discoveries may be used to destroy. It is their duty to assist in the establishment of a rational and harmonious social order out of the welter of human conflict into which the world has been thrown through the release of uncontrolled sources of industrial production and of lethal weapons.

VIII

Ethical neutrality throughout the whole range of science was harmless in Francis Bacon's day because science was relatively powerless. It is not harmless in our day because science is powerful. The means now placed in men's hands by scientific discoveries, if employed without ethical supervision, threaten to make an end of everything worth striving for. The present separation of scientific interests from wider social interests has, as we have seen, a history behind it. Respected institutions exist to keep the separation in force, and we are almost entirely without organized means for bridging the gap. Yet nothing is more obvious than our need of bringing about an intelligently working relationship between loyalty to scientific method and ideas of social change.

In certain fields where formerly we knew of no better way to adjust clashes of interest than to let them fight it out, we are learning the art of collective bargaining. Its value as a means of obtaining the best results which the circumstances then and there permit is well recognized. Collective bargaining was not the invention of some isolated specialist who handed it over as a finished thing to groups lined up against each other. It grew out of the interplay of opposing forces, out of efforts made to reach an adjustment which would permit an interrupted process to go on again. And we may, I think, be sure that it

is still in the early stages of its development. There is every reason to anticipate that as a social principle collective bargaining will be extended to conflicts from which it is at present excluded. Its technique will be improved, the range of values included in its survey will be extended, and the claims which these values make on civilized people will get a more appreciative hearing.

The significance of this development for the problem which has been before us in this and the preceding chapter should be apparent. We are to learn how to apply the art of collective bargaining to the impact of science on human happiness. Representatives of science, ethics, religion, law, politics, business, labor, education, are to be brought together to formulate experimental programs to enrich the satisfactoriness of individual and social living.

The phrase "collective bargaining" as here used is not intended to denote the process in its most artificial form. It does not refer to the kind of compromise in which you "give a sprat to catch a herring," but to the method of resolving conflicts discussed as Realistic Idealism in Chapter 3, the one feasible way of realizing the largest measure of good for all concerned. Intelligently and imaginatively employed it brings together, as we saw, two aims which reinforce each other: the aim to secure a hearing for competing values, and the aim to bring to birth, out of the very travail of conflict, a newly discovered and mutually satisfying plan of action. Every social advance, every forward step in politics, morality, or religion has come about in this manner. A new idea has been born out of a confusing and discordant situation because some trained, dedicated person, or some resourceful, interested group, refusing to accept the discord as final, has searched for and found a constructive idea which served to adjust the difficulty.

Of course this may be a vain hope. We may continue to go on as we have already gone too far. Russell Lord's words, in his deeply disturbing book, *Behold Our Land*, may describe not only what has been and is, but will continue to be true:

Without calling names, consider for a moment the sites of some of our great universities and colleges. Here is one of the oldest in the South. It has been there nearly two hundred years. The country of

its situation has, in the past two hundred years, washed out, over at least three-quarters of its area, down close to the raw red subsoil. Some of its finest old historic places have fallen to ruin, with scant stands of broom-sedge and jack-pine trying to keep a foothold in hideous gullies. The flora of the region has changed in character; the land has run down in appearance until most of it is desolate and depressing; living standards have visibly lowered throughout that country and all adjoining. All this is undeniable; the facts are written large upon the hills. It all went on under the eye of a scientific teaching and research staff of considerable distinction; yet it all was, and is, by them completely ignored. They go right on teaching their geology, their botany, their zoology, their chemistry and physics, their archaeology, Greek and Latin and English, with no thought or mention of the tragic transformation of the good green country roundabout.

IX

Science has spread its roots into all we do and think and feel. We cannot tear them out, and if we try to tear them out we will only endanger the flowering of our civilization. The insights and facilities which we owe to science are invaluable. They have won a measure of freedom for the human mind and a degree of control over physical forces not approached in all prescientific time. But life is an art, *the great art*, greater than any specialized interest or occupation. We too easily forget that men lived magnificently before science haunted their dreams, magnificently in aspiration, in thought, in action. If we care what happens to mankind, the task confronting us is to bring science within this older and profounder art. Science must be embraced in the free creative activity shown conspicuously by men and women of genius, and in less exciting, though equally authentic form, by countless thousands of inconspicuous men and women who take the materials at hand, often meager and unpromising, and make impressive lives out of them.

It is not certain—let us think of it again—that this will be done. Too many scientists may continue to insist upon absolute freedom in their profession, including freedom from the slightest responsibility for the social consequences of their work, leaving it to religious leaders, for whom meantime they make the task more and more impossible, to take care of these consequences. Popular leaders may succumb increasingly to the blandishment of

mechanical power, so that greater and greater numbers will be mentally enslaved and spiritually dispossessed. Aldous Huxley may have spoken prophetically: "One day, perhaps, the earth will have been turned into one vast featherbed, with man's body dozing on top of it and his mind underneath, like Desdemona, smothered."

But science cannot long remain free in a society of slaves. If technological science must continue to throw men out of work and there is no remedy, the day must come when science itself will go on relief. If the meaninglessness which theoretical science has read into the universe must, as science advances, be read into the human scene in its entirety, the scientific spirit cannot survive. "Concern for man himself and his fate," as Einstein has said, "must always form the chief interest of all technical endeavors, concern for the great unsolved problems of the organization of labor and the distribution of goods—in order that the creations of our mind shall be a blessing and not a curse to mankind." The dispossessed have never accepted their fate as final. And when they have thrown off the yoke that oppressed them they have destroyed the good with the bad.

We face a critical dilemma. One horn is the destruction of man by science; the other the destruction of science by man; and a third possibility, a path of escape between the horns, is untrammeled study of fact in union with the hunt for the most promising means of general happiness.

Have we the wisdom and the courage to choose this path and to broaden it into a highway?

Possibly the game (of Life) cannot be won; but if it can be won, it will be the players in the game who win it, not the superior people who pride themselves on not knowing the difference between a fair ball and a foul, to say nothing of those in the grandstand or in the bleachers whose contribution is throwing pop bottles at the umpire.

WILLIAM JAMES CENTENNIAL ADDRESSES
(University of Wisconsin)

CHAPTER 6

With All Our Learning*

I

There is a loneliness of mountain tops and seashores, of forests and deserts. There is a loneliness which finds its way indoors. But there is also a loneliness in crowds. That is how I came to introduce myself to a bright-faced boy of ten or eleven. I was standing on a street corner in St. Louis on a Saturday night, a stranger in a strange city, when he came swinging along, gaily whistling "God Bless America."

How I got him to stop and talk I have forgotten. The memory of it is buried under the memory of what followed. To make conversation, I suppose, I inquired about a large temple-like building across the street. "It's a museum," he told me; "there are all kinds of things in it." "What kinds of things?" I asked. "I don't know," he replied; "I've never seen 'em. It takes money to get in."

Then I saw by the looks of his clothes that a place costing money to get into would probably keep him out. "Strange," I went on, "that a fine building like that hasn't some kind of sign on it. I should think they'd put a sign on it, so that a person could tell what it is."

He hardly waited for me to finish the sentence, "Oh, it has a sign on it all right," he exclaimed, as he pointed toward the top of the building. "See—up there?"

Sure enough, on a wide pediment, in letters big enough to be seen even at night by the light of the street lamps,

* From "With All Our Learning" by Max C. Otto, *The Antioch Review*, Winter, 1945-1946. Copyright, 1945, by *The Antioch Review, Inc.*

was this inscription: **AD GLORIAM MAGNI ARCHITECTI MUNDI ET HOMINUM FRATERNITATEM.** Involuntarily I translated out loud: "To the Glory of the Great Architect of the Universe and to Human Brotherhood."

"Does it say that?" he asked with evident astonishment. Then wistfully, more to himself than to anyone else: "And me with all my Latin, I couldn't read that sign!"

It was my turn to be surprised. "You with all your Latin!" I said, skeptically. "What do you mean, with all your Latin?"

"Why, I know Latin," he answered. And straightening himself up like a little soldier, chest out, arms at his side, and in a soprano of such purity and sweetness that the angels might have envied him, he recited:

*Gloria in excelsis Deo;
Et in terra pax hominibus
bonae voluntatis. Laudamus
te; benedicimus te; adoramus te. . . .*

On and on until I stopped him. "You do know Latin," I answered him, "and you say it well. You must forgive me for doubting your word. It just shows how ignorant some of us grown-ups are."

So we had a little talk. He told me his name; that he had a younger sister, Betty, who was "nuts about kittens" while he was "crazy about puppies"; and that an older brother, Bill, was with the Marines in the Pacific. My own name struck his fancy. "Funny," he said; "you can spell it frontwards or backwards and it's just the same." He informed me that God was a woman and told me what she was called. He was sure that God had to be a woman, had to be like his mother. "My mother makes everything nice and happy," is how he put it. "She always helps me out. When my father comes home he spoils everything in five minutes. God couldn't be like that, could he?" I agreed that he couldn't.

Much more he told me as we talked, until I intimated that it might be time for him to be getting home. He seemed to think so too, for he started at once. But before he left he took another quick glance at the inscription on the big building, and I heard him mutter as he turned to go: "Me with all my Latin. . . ." Then he was off. And as if he had completely forgotten the whole incident,

he broke again into the melody which I had interrupted. So he was swallowed up in the crowd, and soon his cheerful whistle had died away.

II

Tommy walked out of my sight and hearing but not out of my memory. For he had innocently put into words the confession our times might make if times could speak. With all our Latin—all our learning and our science, our vast physical and economic resources and our stupendous mechanical power—with all we know and are able to do, we cannot read the sign Tommy could not read. Fabulous knowledge, ranging from beyond the milky way to sub-atomic electrons, touching every type of structure and process, has not provided us with an exalted concept of our world. Wizard machines almost without number, turning out anything and everything, have not produced what we need above all—a pattern of a machine civilization dedicated to a noble human venture. And now we have exploded the atomic bomb and cast an ominous shadow over the whole world and man's life within it. *With all our learning we cannot read that sign.*

III

"We have nothing to fear but fear itself," said President Roosevelt, and a few years later he gave freedom from fear a prominent place among the four freedoms. But that was before the death-dealing power of the atomic bomb had been demonstrated at Hiroshima. . . .

Hiroshima appears to have changed everything. In the words of Norman Cousins, it has suddenly intensified and magnified a primitive fear, "the fear of the unknown, the fear of forces man can neither channel nor comprehend." Overnight, according to him, this fear "burst out of the subconscious and into the conscious, filling the mind with primordial apprehensions," so that "man stumbles fitfully into a new era of atomic energy for which he is as ill equipped to accept its potential blessings as he is to control its present dangers." The peril has assumed such monstrous proportions for a host of writers and speakers, that fear is being transfigured into a redemptive virtue. Each in his own style makes it a

condition of human survival, as Mr. Cousins does, that "the quintessence of destruction as potentially represented by modern science must be dramatized and kept in the forefront of public opinion. . . . Only then will man realize that the first order of business is the question of continued existence. Only then will he be prepared to make the decisions necessary to assure that survival."

IV

The propagation of this general nervousness is understandable, for the possibilities are in fact frightful. During the first World War a British scientist, Frederick Soddy, referring to the untapped energy of the atom and the efforts then being made to reach it, wrote this warning in his book, *Science and Life*:

A magnificent scientific achievement it will be, but all the same, I trust it will not be made until it is clearly understood what is involved. . . . Imagine, if you can, what the present war would be like if such an explosive had actually been discovered instead of being still in the keeping of the future. Yet it is a discovery that conceivably might be made tomorrow, in time for its development and perfection for the use or destruction, let us say, of the next generation, and which, it is pretty certain, will be made by science sooner or later. Surely it will not need this last actual demonstration to convince the world that it is doomed, if it fools with the achievements of science as it has fooled too long in the past. Physical force, the slave of science, is it to be the master or the servant of men? The cold logic of science shows, without the possibility of escape, that this question if not faced now can have only one miserable end.

The liberation of atomic energy was a hope and a theory when Mr. Soddy wrote. Its achieved actuality has given peculiar timeliness to a poem printed just before "The Secret of Los Alamos" was so dramatically disclosed. The author of the poem, S. F. Clarke, may have written it not far from Los Alamos. "To a Lizard" ends on this note:

I read your mind! In these mad days of strife
 Your dream is not of vanished times, forsooth;
 You wait—while *homo sapiens* revives
 The Age of ruthless claw and bloody tooth.

No; not of greatness gone, your vengeful dream,
 But of a glorious destiny in store;

When reptile tyrants, issue of your seed,
Again may reign—and man shall reign no more

Poets sometimes grasp truth in imaginative vision which escapes the research intellect. Is this what S. F. Clarke has done? Is his apostrophe to a lizard a flash of insight lighting up for a moment the not-too-distant outcome of the human struggle on this planet? We know that other creatures have swarmed and swaggered over the earth until the very instruments of their mastery destroyed them. There is no guarantee that this will not happen to mankind, incomparably skilled in the art of destruction. Only people who are willing to live in a fool's paradise can regard with unconcern the new foci of international conflict which are already developing, or make light of the fully-anticipated invention by industrial science of still more devastating gadgets for the "realists" to cash in on. And only such complacent persons can remain indifferent to the mounting tensions between racial groups and economic classes, any one of which, if lucky enough to get possession of the latest type of explosive, could wipe out its opponents and a lot of the rest of us for good measure.

v

The possible extinction of the human race is not a pleasant thought to dwell upon, for it includes those who are admired and loved, no less than those who are despised and hated. Most of us will therefore manage to forget it as soon as we can. Optimists may of course argue that the human race has maneuvered its way around calamities and threats of calamities, quite a number of them; why not do it again? And some people are too all-knowing to be disconcerted by anything. Yet the writing is plain in the sky over every land and no soothsaying Daniel is needed to interpret its meaning. A way of life changed in its basic purposes, or Isaiah's prophecy applied to civilized mankind:

Their land shall be soaked with blood, . . . from generation to generation it shall lie waste; none shall pass through it forever and ever. But the cormorant and the bittern shall possess it. . . . Thorns

shall come up in their palaces; nettles and brambles in the fortresses thereof; and it shall be an habitation of dragons, and a court for owls.

This is the crucial emergency in which all of us are caught up—Tommy and Betty in St. Louis, and countless boys and girls elsewhere, fortunately without knowing it; all men and women everywhere, some keenly alive to the situation, many incredibly oblivious. Never in the unnumbered centuries since the descendants of submen made their debut as men, has a task equal in size or complexity arisen to test the capacity of the human mind and spirit.

VI

President Roosevelt was nonetheless right. The thing to resist, the thing to conquer is fear, and just now fear of atomic energy; not because there is no danger, but precisely because the danger is great. *We cannot afford to be afraid.* Let us suppose the danger is dramatized and brought to the forefront of public attention; it will not stay there. Fear can be aroused and spread abroad, and it can be exploited by those who know how to play upon the emotions, but it cannot be made to last. Men are not made that way. They won't take it. Perhaps they can't. At any rate they don't. And if it could be, what are the chances that the right persons, the ones who do the greatest damage to the human cause, would be frightened from their scheming? Those who are willing to risk disaster always gamble on escaping the consequences if disaster comes. History provides eloquent testimony to this ugly truth.

Moreover, fear while provocative is uncreative. That is the final word. It can push men into action, but to act wisely takes intelligence, the more so in times of great danger, and that kind of intelligence is not a product of fear. It is the nature of fear to breed suspicion and distrust. These attitudes in their turn give rise to behavior which intensifies the inciting fear. So on and on in a vicious circle that becomes more and more difficult to break through. Feelings, actions, ideas expressive of the fear, and only these, appear feasible under the circum-

stances. Anything else seems unrealistic, fantastic, even immoral. At the same time the creative energies are paralyzed which, if freely brought into play, would lead to better understanding and co-operative effort. Consequently fear causes the situation to grow worse and worse, until the pressure of dread can be withstood no longer and violence breaks out.

VII

It should be obvious that this analysis of fear psychology is intended to be applied universally; to hold, so far as it goes, not only of the American people, but of all peoples. They, too, cannot afford to be afraid, however frightful the outlook may appear. They, too, must resist giving way to fear, even if it is we, the United States of America, alone or allied with others, who try to make them afraid. And unless the relation of fear to the present crisis is seen in this world-wide perspective, there is no prospect that we shall deal intelligently with the gravity of the situation.

It happens that some people, probably a good many all told, find the problem much simpler. According to them we need only strive for a position where we have no reasonable cause to be afraid of anyone, and everyone else has plenty of cause to be afraid of us. A physicist at one of our large universities put the case very neatly. He spoke with unbounded faith of the atomic bomb as an instrumentality of world peace. The atomic bomb, he declared, will do more to eliminate war than all the philosophic ideas ever printed; than all the moralizing about war that **has** filled the air for centuries. And the reason he gave in concise picturesque vernacular was this: "It will scare the pants off them."

Here you have the idea tersely and graphically stated which has been broadcast from high places again and again, though in more elegant phraseology and with less candor.

And is no one ever to scare the pants off *us*? Or don't we need any scaring, our motives, if not our conduct, being invariably above reproach? Those who look at us from outside—from South America, from across the Atlantic, from the Orient—do not think so. They would

have to be foolishly unrealistic to think so. Although the American way of life is maligned when critics call it a scramble for the almighty dollar, physical comforts, and business as usual, it is true of us that material interests are served first; intellectual, aesthetic, moral, religious interests eat at the second table. How can those who must judge from a distance, who have no authentic knowledge of the inner life of the American people, no acquaintance with the average American's aspirations and sentiments, his spontaneous good will and good humor, his yen for ideal intangibles—how can such external observers, seeing little but a competitive struggle to get there first, be expected to take seriously our moral and humanitarian protestations.

Against this larger background the philosophy of our friend the physicist, and of the prominent spokesmen with whom he agrees, can be appreciated for what it is. It is just about the best way to worsen international relations. The fear which we in this country seek to induce in other countries will in due time recoil upon ourselves.

What are other nations to think as they watch the United States of America grow towards the United States Empire; as they learn of confessions reluctantly made in congressional investigations showing that it is deemed necessary "to continue making atomic bombs until we have a suitable supply on hand and the question of international control is determined"; and that until then "the production facilities should be retained and operated about as they now stand"; that every potential aggressor should be forced to keep the peace by making it perfectly clear to him that "an attack on the United States would fail and that it would be followed immediately by a devastating air atomic counterattack," and that this involves "absolute air superiority in being at all times," and the possession of "well-equipped bases, hundreds or thousands of miles overseas"? The natural thing for them to do is suspect us of being animated by a secret design in advocating a United Nations' Organization, a design which is not the establishment of conditions favorable to world peace and fair treatment for all nations, but, on the contrary, the advancement of our own national interest and prestige.

Other nations will therefore prepare themselves to act

accordingly. They will make plans in line with their interpretation of our motives. Their leaders will arouse the people to fear what we are supposed to be up to. This will give our leaders an added reason for spreading fear on our side. This suspicion and distrust will mount all around, making enemies of potential friends, dividing the world into armed camps, until some actual or deliberately concocted incident precipitates war.

VIII

What to do positively and constructively? It is safe to say that no one has the answer. Anyone who pretends to have thereby demonstrates that he has oversimplified the problem. The thinking demanded is so revolutionary, and the acting with which it must be intimately combined is likewise so revolutionary, that if a few initial steps are suggested as a beginning, this is all that can reasonably be expected.

Well, the disposition or temper of mind required of us should be unmistakable. It is *the deliberate acceptance of the crisis as an incitement to spiritual creativeness*. And the practical conduct called for should likewise be evident. Stating the objective for the moment in general terms, it is *conduct which puts spiritual creativeness to work in daily affairs*—in the small, everyday preoccupations which are fundamental to existence; in the broader interests that add excitement and color to living; and in those longer-range commitments through which the individual realizes his highest selfhood and, in union with others, enriches and glorifies the human endeavor.

The adjective “spiritual” may not be a happy choice. It is likely to offend the sophisticated sensibilities of the reader who cannot distinguish it from what Stuart Chase calls “high-power abstraction,” and it will doubtless encourage false hopes in one who thinks of spiritual as essentially otherworldly. But it is still the best word available to designate certain life-elevating ideals. And it has the added value of suggesting continuity between ourselves and our forebears in allegiance to those ideals, a continuity to which we are indebted for much of whatever is praiseworthy in contemporary civilization, as well as for a

good deal of our militant desire to improve upon traditional customs and institutions.

In any case, the problem is not one of finding the right word. It has to do with the conduct of life, and with life at its core and center.

Basically the task is educational, the re-education of adults and the proper education of the young. To some people this will seem a purely academic idea. Education takes time, they will say, and the need is urgent, immediate. The magnitude of the peril is no greater than its menacing imminence. Whatever is done has to be done in a hurry. Unless we act quickly, the whole human business may be brought to a stop by an outbreak of super-atomic bombing. And who can deny categorically that they are right? There may not be time to get returns on an educational investment.

Nevertheless the solution lies ultimately in education. Whatever steps can be taken at once should of course be taken. But the radical change of individual and social motivation which is indispensable cannot be accomplished by an instant act, no matter how all-embracing. The life men live cannot be turned like a flapjack in a pan. Realistic reform, the only reform that takes hold and functions, is reform embodied in new intellectual and moral habits, which is to say that it is the product of education. There may not be time for such reform, or it may turn out that man collectively does not have what it takes, but as Elmer Davis said in the face of an earlier crisis: "The world is run by people who did not slip back into passivity, no matter how disheartening their problem," by people "who sat down to think their way out," and then went at it "to work their way out."

IX

Suppose it is tentatively agreed that the best approach is through education, where should the emphasis be put? In view of the situation in which we are it should be put on improving the understanding of science. As everyone knows, scientific progress has been significantly instrumental in bringing about the present hazardous conditions. A clearer conception of science, of its aims, its experimental procedure, type of data and truth, range

of applicability, and so on, will not in itself provide the way out, but it is a prerequisite to the inauguration of any plan of campaign, of any social program that will. And the deplorable fact is that this conception of science has not entered into the thought of the vast majority of people even in the most enlightened countries. A. J. Carlson is undoubtedly right:

The modern man adjusts to an environment greatly modified by the scientific efforts of the few. The "Peking Man," we may assume, adjusted himself as best he could to nature in the raw. A span of about a million years separates the two. And yet the two are about equally innocent of science, in the sense of the spirit and the method of science as part of their way of life. For science is more than inventions, more than gadgets, however useful and important they may be. Science is even more than the discovery of and correlation of new facts, new laws of nature. The greatest thing in science is the scientific method, controlled and rechecked observations and experiments, objectively recorded with absolute honesty and without fear or favor. Science in this sense has as yet scarcely touched the common man, or his leaders.

Science in this sense has already touched the common man or his leaders, but in another sense it has entered deeply and vitally and inextricably into the life of both. And because in the one sense it has not penetrated inwardly and in the other sense it has done so more and more, mankind has come to the present pass. Applied science has showered men with a wealth of useful devices which are now so interwoven with desires and habits, so inseparable from the economic and social setup, that any other manner of living seems unthinkable. We insist on having more, not fewer, of the gifts of science, more conveniences, more labor-saving mechanisms, more time-saving speeds. And there is always the fascination of the scientific novelties themselves. Although the latest triumph of applied science may endanger the existence of civilized man, yet we look excitedly forward to the flood of atomic energy which is promised, we dream of new giants of power, we wait not too patiently for an unparalleled abundance of new tools and toys. Science the wonder worker has captured us body and soul, and there is no likelihood whatever that some unscientific utopia will ever tempt us away.

In one respect, then, we are science-hearted and science-minded, on whichever side of the tracks we live. We lean on science as a lame man leans on his crutches. And where are we headed with the help of our scientific crutches? Surely that is a question of some importance. Science applied makes the going healthier, easier, more comfortable, but whither does it take us in the end?

x

It is here—namely, when we reflect upon life's direction—that science receives the cold shoulder. Possibly the majority of men and women are satisfied to allow the means and mechanisms of living to determine how they shall live, and all of us must do so more or less; but there are few people who never evaluate the worth of what they are doing, and for a considerable number the influence of critical evaluation pervades conduct as a whole. But while criticism of life, much or little, is thus nearly universal, there is an obvious lack of unanimity as to the criteria which valid criticism has to employ, and there is the widest possible disagreement regarding the source upon which any authentic appraisal of life must draw. On one point there is conspicuous accord: science is not expected to throw light on problems of value. A national poll would no doubt show that the *means* of living we gladly accept from men of science or their business representatives, but that the *ends* of living, especially the so-called higher or finer ends, we insist upon getting from theologians, philosophic idealists, men of letters, artists, or from forays into the occult.

The cause of this twofold commitment is in the main historical. Some three hundred years ago a number of men of genius set out to acquire a new kind of knowledge which would enlarge man's control of his earthly destiny through mastering the forces of nature. For reasons which were good at the time, personal safety being one of them, they restricted the design of investigation to "facts," and ignored "values." As a result they handed down a cultural dualism which succeeding generations of investigators and thinkers have perpetuated and intensified; a dualism of objectives which not only separates the practical means

of living from the higher ends of life, but makes them competing drives in the individual and in society.

Nowhere has this enterprise prospered more remarkably than in the United States. Drawing upon the physical resources of a vast, scantily-populated wilderness we have transformed it into a teeming commonwealth, and have advanced to a place of world leadership. It is a material leadership. We have the money, the machines, the natural resources, the industrial equipment and organization. In moral leadership—if what one reads can be trusted—we never stood so low in world esteem.

The atomic bomb has shocked us into a clearer appreciation of the fact that power alone is not enough. But the atomic bomb has done nothing to impair the notion that practical means and ideal ends belong to separate orders of reality, to each of which we owe allegiance in turn. We continue to believe—indeed it looks as if we were to believe it more than we have yet believed it—that to live and succeed a man must adopt materialistic standards, while to fulfill his latent possibilities as a civilized human being he has to commit himself to otherworldly standards. This is the fateful division which has to be healed, this division between “body” and “spirit,” and between the institutions that have grown up to serve them in separation. Unless it is healed, every increase in power is potentially a step toward catastrophe.

A problem of these proportions should rule out all dogmatism. Too much of weal or woe depends upon success or failure in its solution. At the same time it calls for the frankest and clearest declaration of convictions. Personally I am convinced, as the foregoing discussion has implied, that the one hopeful approach is through the extension of scientific thinking to areas from which it has been all but excluded. By this is not meant the emptying of human life into test tubes, or the substitution of dial readings for the varied qualities of living experience. It means that the dependable, the objectively testable kind of thinking which is the rule in the natural sciences should be put to work in the great laboratory of man's search for the good life—the good life richly and profoundly conceived.

Sooner or later a study of the actual as against the possible significance of science for human life will come up against the demand for absolute freedom of scientific research. It is the common contention that scientists must be relieved of all responsibility for the use made of their discoveries; that to hold them at all accountable would be ruinous not only to science but to civilization. The problem is much too complex to be discussed adequately in this place, but some aspects of it are so directly involved in the proposed better understanding of science that they must be introduced.

No one can seriously doubt that control by an external authority is the antithesis of scientific procedure. It was possible during the war to organize and direct scientific projects with the deliberate purpose of producing a designated result, but the program entailed an extravagant expenditure of money, and it exploited stored-up knowledge, accumulated from previous investigations conducted under the usual unforced conditions. A permanent organization and control of science would therefore be self-defeating. These and other relevant facts are set forth by the Director of the Natural Sciences of the Rockefeller Foundation in a letter to the *New York Times*, objecting to "an all-high, all-embracing central organization" for the supervision of scientific activities. Says Warren Weaver:

The man of the street is stunned by what science has done during the war, but he is also misled by it. It is just as though some group of gangsters had held guns at the heads of every member of the board of directors of some great corporation and forced them to declare as dividends all the surpluses which had been earned over many previous years. The stockholders, seeing their dividends suddenly increased, are delighted. They want to see the system continued. They do not stop to think that you cannot go on declaring dividends out of surplus. That runs out one day, and it is necessary to resume earnings.

The conclusion which Mr. Weaver reaches is that "the earnings of science are not to be gained by organizing a super-control which holds guns at the heads of scientists and tells them what to do. The earnings of science are gained only by setting the scientists free."

Science set free—surely this is greatly to be desired. And science utilized to forward rather than to thwart man's progress toward physical and moral good, surely this, too, is greatly to be desired. Hence the dilemma which Raymond B. Fosdick, President of the Rockefeller Foundation, made explicit in a thoughtful, searching talk over the radio. "We have always been inclined," said Mr. Fosdick, "to think of research and technology as being consciously related to human welfare. Now, frankly, we are not sure, and we are troubled, by the realization that man's brain can create things which his will may not be able to control." And this:

To the layman it seems as if science were facing a vast dilemma. Science is the search for truth, and it is based on the glorious faith that truth is worth discovering. It springs from the noblest attribute of the human spirit. But it is this same search for truth that has brought our civilization to the brink of destruction. . . . The pursuit of truth has at last led us to the tools by which we can ourselves become the destroyers of our own institutions and all the bright hopes of the race. In this situation what do we do—curb our science or cling to the pursuit of truth and run the risk of having our society torn to pieces?

Mr. Fosdick sees no easy escape from this dilemma. He is not certain that there is an escape. And it is this honest realism, and the equally honest moral concern which, in my judgment, makes this radio talk strikingly exceptional. "All cannot be lost," I said to myself, "while such fundamental ideas can go out over a national hook-up."

There is, however, one aspect of the dilemma which, I am afraid, remains unilluminated in the talk. It must be granted that the "good and evil that flow from scientific research are more often than not indistinguishable at the point of origin," so that no scientist can foresee the good or evil uses to which his results may be put. Of the examples cited perhaps this one is most telling: "When Einstein wrote his famous transformation equation in 1905 he was not thinking of the atomic bomb, but out of that equation came one of the principles upon which the bomb was based." True enough. Einstein, as of then and there, must be absolved of responsibility for atomic bombing. Equations do not explode. But if it is true that he told President Roosevelt that the equation would be used

ful in the invention of the atomic bomb, and the suggestion was thereupon followed up, he became in that sense and to that degree responsible. And the scientists who actively engaged in making the bomb, which, according to the scientist in general charge at Los Alamos, they did, these scientists were still more directly responsible. For bombs are made to be exploded, and those who knowingly helped to make them, helped to make them to be exploded. They share in the responsibility for the destruction caused, along with President Roosevelt's successor, if it is true that he ordered the explosion.

This is not in the least all there is to be said about science and social responsibility. But it is a beginning.

There are other questions, too, which should have more critical examination than they are receiving. Why not, for example, rid our minds of the illusion that the natural scientist is in search of "the truth"? It is the widespread belief that he does just this, and that it would therefore be a crime to hinder him in any way, which constantly blocks any serious examination of the question. But what does the scientist actually do? He tries to master some particular problem which for one reason or another he has taken as his own, and in solving that problem he employs the most reliable method yet invented of testing conclusions. This is all he does, and it is a great deal.

xii

To sum up. The destiny of the American people, the destiny of mankind, hangs on what is done to symphonize these dynamic agencies of modern life—mechanized power and civilizing ideals. Historical events have separated them as self-contained, self-sufficient, self-justifying enterprises. They belong together in reciprocal relationship.

To bring such integration about will not be easy, for it involves interfering with vested interests and established customs. On the one side are the conscious or unconscious devotees of power: military leaders who contend that the first obligation is to make sure of supremacy in might; men of science who declare themselves undone unless their research ambition is unhampered by social responsibility; business executives who claim the right to turn atomic energy into cash. On the other side are the edu-

cators, men of letters, philosophers, prominent churchmen who, a hundred to one, argue that true values are intrinsically supersensuous. They are apprehended by means of pure reason, divine revelation, or mystical ecstasy, and when so apprehended will bridle the secular struggle for power.

No sensible person will expect to see the job finished in a year or a decade, but it can be begun at once by taking care of the pressing obligations which the contemporary upheaval has deposited on our commercial, political, educational, and religious doorsteps.

In the long run—to say it once more—the problem is educational. We need to be educated to want facts; facts about the world from which we stem, facts about ourselves as having our origin in that world, facts about thinking and idealizing, and the conditions that cause these unique abilities to thrive or decline. It is about time, for instance, that we quit dodging the issue by concentrating our attention on abstractions—quit denouncing “war,” be-moaning “human nature,” belittling “politics,” and really go after the conditions which have the evils we complain of as necessary consequences.

We need to be educated in reverence for the human quest, and in realistic idealism which is this reverence concretely applied.

We need to be educated in the neglected art of resolving otherwise irreducible conflicts, including war, man's direst enemy.

There is no ground for pessimism if we begin where we are and resolutely press on. There is no ground for anything else if we do not.

Can we read the sign in the sky over Hiroshima before it is too late? That remains to be seen. We have had the courage to stake everything on a race for power. Have we a comparable courage to make clear to our minds, and to espouse in day-to-day action, the full breadth of the way of life we have long professed? If we have, all may yet be well. If we have not, we are done for.

I would still say as I did years ago, though now with deepened conviction and a greater sense of urgency:

Only let it be taken to heart that soul is not the name of a thing, but of a life; that the soul's salvation is not a commodity or a gift to be bought or begged, but a development to be attained; that to save one's soul is not an instantaneous deed, but a life-long adventure; not the rescue of an indefinable entity in preparation for a life to come, but the creation of a type of personality through loyalty to concrete values as these are at issue in everyday experience. It is an inner richness and ripeness, a sensitiveness to truth, to beauty, to the dignity of life.

THINGS AND IDEALS

CHAPTER 7

The Hunger for Cosmic Support*

I

FOR days and days together growing crowds of men and women tramped over hot, dusty roads, headed for a little gem of blue water set in a circle of many-colored hills in northern Palestine. The report had spread abroad that a young man was passing through the coast towns of the Sea of Galilee, teaching about ultimate matters with unheard-of freshness. He was said to bring hope to the discouraged, health to the sick, uneasiness to the mighty. It was this young man they sought. And when they found him—perhaps on a hillside with a crowd gathered at his feet, or teaching from a boat at the edge of the sea to the multitude that would otherwise press too close; sometimes early in the morning in a secluded place of prayer, or again in the cool of evening, at his temporary abode, surrounded by those brought to him suffering from all manner of diseases—wherever it was, when they found him they surrendered one by one to his unique personality. There was something so engaging yet noble in his bearing, something so simple yet profound in his thought, something so poetic yet vital in his speech, something so sad yet healing in his smile that, presently,

* From *Things and Ideals*; an essay in functional philosophy by Max C. Otto. Copyright, 1924, by Henry Holt & Company.

turning to one another, they whispered, "Never man spake like this man."

Which is by no means to say that they understood him. They were won by his personal charm and impressed by his exhibition of power, but they misunderstood his message and failed to catch his spirit. He announced a new era based upon the principle of human equality; they forthwith fell to wondering and then to disputing which of them should have the chief advantage from the revolution. He urged a change of heart as the first essential to the changed order; their minds perpetually revolved about a rearrangement of possessions. So it happened that one of his most impressive discourses was devoted to this issue. On a certain occasion when the throng pressed about him and when even those nearest to his thought, the men he had chosen to carry his message to the world, were in a wrangle as to the exact dignity each was to possess in the coming kingdom, he spoke his mind on the subject. From that discourse a searching question has come down to us. It is recorded in three of the four biographical sketches we have of his life, and, as we have been taught, it runs thus:

What shall it profit a man, if he shall gain the whole world, and lose his own soul?

II

Three years after coming to public notice (or perhaps it was only one year, as some think) the young leader was dead. Persons of influence had secured his arrest, and had aroused the populace against him. He got the sort of trial a social pioneer usually gets, was sentenced to death by a judge who confessed he could discover no guilt in him, was led out to the hill of execution, a curious throng crowding in train. His friends deserted him or were awed into silence. The more brutal or ignorant of the rabble jeered and mocked. There, on the central cross of three, black against the evening sky, his great spirit took flight. The crowd strolled back, gossiping, jostling one another through the city gate. Night settled down, the stars came out, Jerusalem slept. And the young Galilean slept soundest of all. So quickly may even a significant life be snuffed out. Or seem to be snuffed out. For it

is now clear enough that the challenge of the brief life has come down the centuries. We still ask, and with new insistence:

What shall it profit a man, if he shall gain the whole world, and lose his own soul?

For all that, the meaning of the question is far from obvious. Doubtless it is a question in form only, the thought being categorical. We are meant to understand that no matter what a man accumulates, no matter what he gathers together, if in this gaining he loses his soul, the loss is greater than the gain and the sum is failure; in a word, that the man who loses his soul is bankrupt. This much is clear. Beyond this, however, the citation bristles with questions. What is meant by the "world" in the gaining of which one runs such risks? What is meant by the "soul" which is so highly valued? What does it mean to "lose" this so highly valued soul? Furthermore, are the alternatives—world and soul—mutually exclusive? Are the goods of life and the life of the soul absolutely incompatible, so that to the extent one is gained the other is lost? Or is there a point beyond which any further gaining of the world involves a corresponding loss of soul?

The early church answered all these questions in clean-cut fashion, and in doing so gave a turn to the conception of the higher life under which we still operate. The world was the complexity of people, institutions, goods, enjoyments, activities with which men commonly busy themselves. The soul was a spiritual entity temporarily imprisoned in a corrupt and corruptible body, but destined to be freed in due time to live in a heaven of unutterable bliss or a hell of unspeakable torment forever. To lose this soul was to seek satisfaction in the world and in consequence to fail of the inner regeneration upon which eternal felicity depended. Nor did a compromise way of life appear possible. The revolutionary feature of Christian philosophy was exactly its insistence upon the renunciation of the goods men naturally aim to secure and the obligations men naturally acknowledge. For allegiance to these things that are seen but pass away was substituted allegiance to the things that are not seen but abide, while the everyday social and civic loyalties were replaced by a desire to do the will of the supernatural Ruler of the

universe. This is why we say that Christianity revalued all values. Life got a new polarity. It became the rehearsal for a transcendental drama to be staged in the "city which hath foundations, whose builder and maker is God." In and of itself, life on earth had neither worth nor significance.

III

Is this what the Man of Galilee intended? It would seem not. If one reads the Markian or earliest account of the movement which made its appeal to men under the slogan, "The Good News," and reads it as one does the report of other social phenomena, one gets an unmistakable sense of the importance of the here and now. The whole story has the healthy smell of earth upon it. Disdain of human beings with their everyday ties and occupations is certainly not the dominant tone of the narrative, if it is present at all. Indeed the common business of living, permeated by a new spirit, is exalted and glorified.

The burden of the discourses is the urgent need for a manner of life free from economic injustice and religious formalism. It is true that the new order is referred to as the Kingdom of God, but this need only mean that the change was to be thoroughgoing, a change in the very spirit, not merely the outward form of life, and that such change was thought to bring the earthly economy into accord with the spiritual reality at the heart of things. Life was to be shifted from a possessive to a non-possessive basis, and religion from conventional observance or rites to vital participation in the good life. Men were to become brothers in the adventure of improving their common earthly lot, and this spirit of brotherhood once attained, all things needful should be added unto them. If it is only by a strained interpretation that some recent writers have been able to make it appear that the origin of Christianity was a proletarian uprising led by a carpenter from Nazareth, it is by an interpretation no less strained that the learned doctors have been able to make it appear that the whole story is of other worldly import. Whatever else the record discloses it is clear that the young Nazarene who taught for a brief but glorious season in Palestine regarded it as his mission to arouse

mankind to the possibility of a more abundant life on earth.

How did it happen then that Christianity early received the supernatural intent which it retained through the centuries? The full explanation is a long story, but roughly speaking two factors may be singled out as mainly responsible: one, the public execution of the Galilean idealist at the beginning of his career; the other, the rise of a new leader, a remarkable youth from the city of Tarsus. On the highway to Damascus he was suddenly overwhelmed by a shining apparition of the recently crucified Jesus, and thereupon dedicated his life to the movement he had hitherto despised. It was Paul who rallied the adherents of what threatened to become a lost cause. And he was able to do this by inspiring them with a profoundly new conception of their revolutionary project. Paul came to his task with a very different cultural background from that of Jesus. He had been deeply influenced by the Greek-Oriental mystical tradition, and this influence injected itself into his conception of the movement he espoused. In this new conception the crucifixion was not, as it must have seemed to most, the unhappy end of a thwarted or misguided idealism, but the divinely ordained climax in the life and work of the long awaited Messiah. And the Messiah was no longer regarded as mortal, but the divine Logos or Reason manifested in the flesh. In Paul's teaching, therefore, the cross on Golgotha was transformed from a sign of defeat into a symbol of victory. It was the central fact in God's plan for the salvage of man's heritage, and, incidentally, the most important event of human history.

It was Paul the first organizer, theologian, philosopher of the Christian movement, a genius at propaganda, a man of versatile mind and tireless spirit, who gave Christianity its distinctly other worldly emphasis. In contrast with his master's outdoor discourses on the art of living, Paul's writings are learned theological disquisitions on the purposes of God and the technicalities of salvation. In his view the chief problem of man is not how to improve his lot on earth through the establishment of a juster social economy, but how to win life everlasting in the world to come through faith in the divine plan of redemption. Conditions were ripe for a philosophy of

world denial. For two centuries and more the drift had been steadily in that direction. The zealous leadership of Paul gave a new momentum to this drift, and Paulinian theology provided a comprehensive rationalization of the widespread and deep-going loss of moral nerve characteristic of the period. The belief grew that the existing order was on the verge of collapse, to be replaced by a commonwealth of the redeemed under the regency of the returned Son of God. Consequently man as man became base, life on earth vain and profitless, the one thing worth striving for the crown of approval which "the Lord, the righteous judge," would give to all them that loved his appearing.

IV

This transformation of a social idealism into a supernatural cult is a striking instance of what has occurred again and again in human history. Since man became aware of himself as in a world other than himself, every attempt to deal in a straightforward manner with the world, to look it directly in the face and to adjust life to this view, has been opposed and circumvented by a counter attempt to give facts and events a supernatural interpretation. Nothing has been more powerful than the tendency to regard the sensible world as "a disheartening whirlwind of vain and fragmentary facts," utterly without meaning unless converted, through the laborious use of reason, into a hieroglyphic of divine purpose or an apparition of God. Scarcely had the scientific school of Miletus, which set out to leave off telling tales about the world and instead to study and describe it, culminated in the scientific naturalism of Democritus when it was overwhelmed by a wave of transcendentalism from Athens, to be followed in time by wave upon wave of Christian theology. In a like manner when, after an almost interminable night, day once more dawned; when through the voyages of the great navigators and the discovery of the telescope and microscope, men were introduced to a new earth, a new heavens, and a new world of microscopic life—all this new knowledge was feverishly

exploited in the interest of supernaturalism. Natural theologies, as they were called, often beautifully bound and richly illustrated, issued in unbelievable numbers from the press, intent upon giving a supernatural coloring to this wealth of new data. The same thing happened again in the case of evolution. Even while the battle was still on over the naturalistic origin of man, Darwinism was given a supernaturalistic twist. Men were told that to look upon evolution naturalistically was to see it out of focus. They must see it as a supernatural scheme to bring mankind to perfection in order to get its true proportions. Said John Fiske:

With Darwin's biology we rise to a higher view of the workings of God and the nature of man than was ever attainable before. So far from degrading humanity, or putting it on a par with the animal world in general, the Darwinian theory shows us definitely, and for the first time, how the creation and the perfection of man is the goal towards which Nature's work has all the while been tending.

And in the immediate present, enormously rich in scientific achievements and projects for the future, we witness the unusual phenomenon of an outspoken alliance, offensive and defensive, between the laboratory and the church, against all who would take their naturalism straight.

v

Inadequate as any such meager summary must be, it yet suggests how insistent and powerful has been and still is man's determination to view the drama of life from the wings of the cosmic stage, a determination the more singular since each new report of the vision to be gained from this vantage point has made delusions of the rest, only to be itself in like manner reduced to vanity. So ontologies and theodicies have steadily vanished under the weight of their successors, as the surface of the earth has repeatedly been buried under later deposits. Great thinkers have deployed an interesting array of facts, have won the devotion of disciples, but after centuries of searching man must still confess:

Into this Universe, and *Why* not knowing
 Nor *Whence*, like Water willy-nilly flowing;
 And out of it, as Wind along the Waste,
 I know not *Whither*, willy-nilly blowing.

Why is the venture not given up? Across innumerable attempts is written at last:

There was the Door to which I found no Key;
 There was the Veil through which I might not see.

Why, then, do ever new searchers take up the task? Rebuffed, defeated, what is it that urges them on?

It is the same thing which was felt by our brothers and sisters who have slept through millenniums in the sands of the East and which will stir to like activity men and women to whom our times will be as the times of Tut-Ankh-Amen are to us. For there is a rock fact of human nature against which the waves of rhetoric and logic dash in vain; a rock fact which, after all the proofs and disproofs have fallen back into the sea of words from which they came, stands forth the clearer for the spray dashed over it. What is this stubborn fact? It is the fact that human beings refuse to be physically alone in the universe; the fact that they demand that somehow there shall be a Power at the heart of things which will not let them suffer ultimate defeat, let appearances be what they may.

Cosmologies become obsolete and creeds change; it is the fate of the intellectual symbols eventually to be looked upon as primitive and childish. But men in general feel with Fiske, that however cumbrous and obsolete these formulations may be in detail (as the necessity once so keenly felt by our forefathers, that man must occupy the largest and most central spot in the universe), they rest upon a fundamental truth which mankind can never safely lose sight of, namely, that human affairs are the chief object of God's care. "Once dethrone humanity," he argued, "regard it as a mere local incident in an endless and aimless series of cosmical changes, and you arrive at a doctrine which, under whatever specious name it may be veiled, is at bottom nothing more nor less than Atheism." Then all purpose vanishes from the cosmos. The

universe becomes a box of toys or a house of cards, and all meaning vanishes from human life.

In the same vein one of the foremost scientists of our time writes: "If there be a man who does not believe, either through the promptings of his religious faith or through the objective evidence which the evolutionary history of the world offers, in a progressive revelation of God to man, if there be a man who in neither of these two ways has come to feel that there is a meaning to and a purpose for existence, if there be such thoroughgoing pessimism in this world, then may I and mine be kept as far as possible from contact with it. If the beauty, the meaning and the purpose of this life as revealed by both science and religion are all a dream, then let me dream on forever."

Let me dream on forever! In this cry we get a clew to the nature of the demand for cosmic support. It is emotional, not intellectual. Though we may be told that nothing short of the assumption of a purposive universe, in which man's higher development is definitely aimed at, can save us from *intellectual* confusion, it is not the fear of this, but of *emotional* confusion which gives the demand its vitality. If in the face of consistent intellectual defeat the result is not resignation but change of front, may we not conclude that the search for cosmic purpose, for the everlasting arms underneath, for psychic kinship with what Edwyn Bevan has called, "a Friend behind phenomena," has its source in the non-intellectual side of man's nature?

And if we do not oversimplify too much we must agree that men do not live by logic alone. No human being would be completely described were we able to catalogue his sense experiences, his thoughts, his memories, his castles in air. For sensations, thought, memories, imaginings, are saturated with feeling as all things in physical nature are said to be saturated with ether. Sometimes the emotional element is present like the gentle swell on the bosom of a quiet sea, at other times it rolls and tosses like irresistible breakers, washing away what labor and pains had slowly erected, leaving ruin and regret, or relief and joy in the wake of the storm. But always it is present, oozing into every crevice, searching out all interstices, inundating the remotest bounds of personality. The logi-

cally best society may turn up its nose at the tang and piquancy of emotion; may attempt to set up an exclusive intellectual quarter out of its reach, where no weeds of fallacy or wild flowers of fancy shall be permitted to grow, where syllogistic order and calm shall reign unchallenged. Life will overflow any such endeavor and be the richer for it.

VI

But to recognize the inevitability and worth of feeling is not to admit that everything that is longed for is actually there to be had. And the fact that man naturally objects to being quite alone in the universe, and thus craves fellowship with a great Guarantor of his interests and his personal continuance, is no proof that anything corresponding to the object of this longing exists. It may rather testify to the vestigial remains of an elemental hunger brought down from the dim past, and transfigured by all manner of accretions through institutions and customs. Gilbert Murray has this interesting hint in his admirable study of the Stoics:

We are gregarious animals; our ancestors have been such for countless ages. We cannot help looking out on the world as gregarious animals do; we see it in terms of humanity and of fellowship. Students of animals under domestication have shown us how the habits of a gregarious creature, taken away from his kind, are shaped in a thousand details by reference to the lost pack which is no longer there—the pack which a dog tries to smell his way back to all the time he is out walking, the pack he calls to for help when danger threatens. It is a strange and touching thing, this eternal hunger of the gregarious animal for the herd of friends who are not there. And it may be, it may very possibly be, that, in the matter of this Friend behind phenomena, our own yearning and our almost ineradicable instinctive conviction, since they are certainly not founded on either reason or observation, are in origin the groping of a lonely-souled gregarious animal to find its herd or its herd leader in the great spaces between the stars.

Much might be gained by acting on this hint. What noble things might be accomplished if we recognized in our insistence upon cosmic companionship a deflection of the desire for fellowship with our kind, and in the craving for transcendental support of our ideals a distortion of our deep interest in human well-being and prog-

ress! For John Dewey is right: "God only knows how many of the sufferings of life are due to a belief that the natural scene and operations of our life are lacking in ideal import, and to the consequent tendency to flee for the lacking ideal factors to some other world inhabited exclusively by ideals."

One tragic result of our diverted aspiration is that the conditions of life are fixed by those who have no concern for human destiny, either in this world or any other. There have always been men who, granted earthly success, were willing, like Macbeth, "to jump the life to come." That they have urged the mass of mankind to be faithful to their orisons, have indeed insisted upon this, is true enough. They have often been superstitious, even if not idealistic, and they have sometimes been unscrupulously clever, persuading us to fasten our eyes upon the sky that they might the more readily relieve us of things which we are slow to surrender voluntarily and deliberately. In any case, while unbelievable control has been won over natural forces, opening up almost unlimited opportunities for improving the conditions of life, it is a fact almost too notorious to bear mentioning again that the right to exploit these resources has passed into the hands of those who have been able to seize them and to turn them to their own advantage. It has always been a step towards a more worthy social economy, towards a better general chance at a more fortunate existence, when men and women have refused to be put off with the promise of a supernatural recompense for actual earthly defeat; when they have dared to entrust their destiny to the social devices their combined aspiration and intelligence might invent.

It is thus a constructive social suggestion that we endeavor to give up, as the basis of our desire to win a satisfactory life, the quest for the companionship with a being behind or within the fleeting aspect of nature; that we assume the universe to be indifferent towards the human venture that means everything to us; that we acknowledge ourselves to be adrift in infinite space on our little earth, the sole custodians of our ideals. There need be no spirit of defiance in this, no bitterness, no shrill declaration that:

It matters not how strait the gate,
 How charged with punishments the scroll,
 I am the master of my fate:
 I am the captain of my soul.

Defiance testifies that the challenge has not really been accepted. No; accept the stern condition of being psychically alone in all the reach of space and time, that we may then, with new zest, enter the warm valley of earthly existence—warm with human impulse, aspiration, and affection, warm with the unconquerable thing called life; turn from the recognition of our cosmic isolation to a new sense of human togetherness, and so discover in a growing human solidarity, in a progressively ennobled humanity, in an increasing joy in living, the goal we have all along blindly sought, and build on earth the fair city we have looked for in a compensatory world beyond.

VII

This is the challenge of these supreme times. The hope of a new world is alive to-day in millions of hearts the world around. May we not take courage from past achievement? No single one of us has passively accepted life; we have all insisted upon remaking it. Looked at from day to day little may seem to be accomplished, and yet what a series of victories a human being wins in a lifetime! Unconsciously, at first, and then more and more consciously, we have refused to feel at home in the world as we found it, but have insisted upon finding a world in which we could feel at home. Disillusions have not permanently disheartened us; defeats have balked us only for a time; in the very ruins of our hope we have found material for new dreams. In spite of squalor and meanness and vice there are few men of whom this may not be said in some degree. Even at the bier of one who has been stranger to great aspiration (type of the inglorious mass of us), we may, much more often than not, say in Stevenson's words: "Give him a march with his old bones; there, out of the glorious sun-colored earth, out of the day and the dust and the ecstasy—there goes another Faithful Failure!"

And the record of the individual is magnified in the achievement of the race. Laboriously the progenitor of

man separated himself off from the brutes. With indescribable slowness the scope of life was enlarged, its rude economy enriched by discovery and invention, and beautified by the rise and development of the arts. Gradually the periphery of interest in others was pushed out, so that whereas it was once inconceivable for a man to be vitally concerned for the welfare of any one beyond the confines of his tribe, the time came when Terence could say: "I deem nothing alien to my feelings that concerns a human being." Granted that this outlook has never become the universal point of view, and that periodically great sections of mankind have been swept back into an attitude more nearly resembling the spirit of the tribe, yet in spite of stumblings and oscillations great progress has been made in the development of an intergroup, an international, and an interracial imagination, and much has been done in the way of creating instruments to make this imagination practically effective.

While it is true that tribal feelings can be aroused, the appeal which arouses them must now be made on a plane quite foreign to the tribal mind. Pure tribal spirit has been outgrown, and the trend of human emotions is away from it; so distinctly away from it that the outstanding temper of our day may be said to be the audacious hope of re-creating the world in the interest of all mankind. The hope may indeed come to little, for there are numerous obstacles in the way of its realization, but the hope itself is a great achievement, testifying to the momentum of the forces that actualize themselves in human life as social idealism. All this may encourage us to believe that a new world is possible—if we will.

To save human life from ultimate defeat may indeed be out of the question, for the cosmos appears indifferent to the drama enacted on our planet. But, after all, nothing can defeat man but man himself. It is predicted that as the earth now sleeps every year for a winter, as we sleep every day for a night, so by and by the earth shall refuse to awake, as we rest at last in the sleep that nothing disturbs. It is predicted that then the uninhabited earth shall, like the moon, "roll its pale corpse in space," until it collides with the no-longer procreant sun, and the whole lifeless mass, ignited by the terrific shock, shall burst, to float a gigantic fiery veil in the boundless vast.

Let it be so. Meanwhile millions upon millions of human beings will strive and suffer and enjoy. They will suffer more and more and enjoy less and less, or suffer less and less and enjoy more and more. And the chief source of their misery or happiness will be human beings and the structure of society. It will be defeat if in the distant future the coöperative adventure of making human life richer and happier is interrupted by a change in the cosmic weather, but a kind of defeat which is at the same time the highest form of victory. *Real* defeat will overtake humanity only in so far as men themselves forgetting that they are comrades in doom and agents of each other's woe or weal, go down the years estranged from the one friend they have—each other.

Along the upper reaches of the Ohio, where the foothills of the Allegheny Mountains hem in one of America's beautiful streams, you sometimes awake at daybreak to find that a heavy mist has obliterated the landscape, leaving only a narrow circle of it dimly visible about you. When this happens, you may resign yourself to the weather and wait for a change, or you may do what you have on hand with the best cheer you can muster, calling to the neighbor whose shadowy form you can see, though you cannot be sure what he is about.

As you keep busy, the mist rises. You see the river, rolling on toward the Mississippi. Then you see the opposite shore, the houses of the city, the taller buildings, the towers of schools, the steeples of churches, highest of all. Slowly the mist climbs the hills, hangs for a little like a torn veil on their summit, then vanishes, disclosing a blue sky. And the work you began in the fog you continue in the sunlight.

From BACCALAUREATE ADDRESS at
The University of Wisconsin

CHAPTER 8

Authoritarianism and Supernaturalism*

I

The public mind, after years of obtuse indifference or stubborn resistance, has suddenly been converted to the belief that hereafter mankind will live in a world unimaginably different from the one we have known. The idea has spread like a contagion. Everybody is talking it. It has become almost impossible to read anything or to listen to anyone and escape being told that the old familiar world is shifting under our feet and that a new unfamiliar world is being pushed into its place.

Yes, we are all talking it, but with our fingers crossed. We mean what we say, but not quite. Far more alive than the response to anticipated novelty is the assurance, or if not the assurance, at least the hope, that whatever we value most will somehow endure, will in some way survive unaltered. The world is to change, of course, change as it has never changed, but not all of it; only the superstructure, not the foundations; or if even the foundations,

* From paper of the same title read at the Conference on Scientific Spirit and Democratic Faith, New York City, May, 1943.

then not the rock on which these foundations rest. Economic society, politics, social life, everything of that sort will be transformed; but not our faith, not our religion. Nothing can alter that "central peace at the heart of ceaseless agitation."

Let us consider at least one example of this dual emphasis. It is from a radio address on the Catholic Hour by a professor of philosophy at the Catholic University of America:

The old wells have run dry; the staff of unlimited progress on which we have leaned has pierced our hands; the quicksands of our belief in the unqualified goodness of human nature have swallowed the superstructure of our materialist world. We are definitely at the end of an era of history. . . . The world is pulling up its tents; humanity is on the march. The old world is dead.

In such words as these he sets forth the fact of change; and in the following paragraphs he places this fact of change in the context of the "abiding and changeless":

There are really two great events in the modern world. The *war* and the *revolution*. . . . A war involves nations, alliances, men, armies, defense plants, guns and tanks. A revolution involves ideas. A war moves on a horizontal plane of land, territory and men; a revolution moves on the vertical plane of ideology, doctrine, dogmas and creeds and philosophies of life.

The war is only an episode in the revolution—something incidental. It is the military phase by which the revolution is working itself out. . . . A far more important question than "Who will win the war?" is the question: "Who will win the revolution?" In other words, what kind of ideologies or philosophies of life will dominate the world when this war is finished?

There are actually three great philosophies of life or ideologies involved: first, the totalitarian world view; second, the secularist or sensate view which has attached itself like a barnacle to the ship of the western world; and, third, the Christian world view.

We repeat, there is the totalitarian world view which is anti-Christian, and anti-Semitic and anti-human. There is the secularist view which is humanistic and democratic but which attempts to preserve these values on a non-religious and non-moral foundation by identifying morality and self-interest instead of morality and the will of God. And there is the Christian world view which grounds the human and democratic values of the western world on a moral and religious basis.

Pray for victory? Yes! We will win that, there is no doubt! But the peace, the restoration of the moral law, a new order based on God's justice—that will come only by a return to the mind and spirit of the Church during the first few centuries. Our bodies need not be in catacombs but our minds must think and pray as if our bodies were.

II

One swallow does not make a summer and one quotation does not make a proof. But this quotation is more than one quotation. It is an unusually precise and direct formulation of a view expressed in principle by priests, rabbis, and Protestant clergymen, by many college presidents, philosophers, scientists, and leaders in business, and by numerous men and women of all classes in every part of our country. And the burden of it is plain. We live in a shaken time, and are moving irresistibly into a world we cannot foresee; but wherever we are fated to go and whatever we are destined to face, our religion will go with us unchanged, for it is by its very nature not of space nor of time.

Is this an accurate appraisal of the present situation? Some of us cannot think so. World-revolution is not an idea to which we have recently been converted because it is in the news. We have long recognized it to be upon us, and we have endeavored to school our minds and hearts to an acceptance of it. No thoughtful person will claim that he foresaw the depth to which human affairs were to be agitated, or that he anticipated the magnitude of the resulting world-changes. But there is one thing which some persons foresaw, and that foresight has not had to be revised, and there is no indication that revision will be necessary in the future. To put it flatly: since man was to live in a new world he could not continue with his old religion. He would either be inspired by a new religious spirit or he would get along without religion altogether.

Occidental supernaturalistic religion originated at a time when the modern scientific enterprise had not been heard of, and when the peoples of the earth lived in isolation from each other. Are we to suppose that this pre-scientific and insular religion is to serve men who have become science-minded and who must live, in a literal sense never true in the past, in a world that is one vast neighborhood? "The old world is dead," boldly announces the professor of philosophy. Very well. But he does not tell the whole story. The old world is dead, and the religion of the old world had to die with it.

You reply that it does not seem so? You point to new

church buildings, to the founding of lectureships, to the flood of articles and books, forums, radio addresses devoted to the advancement of just that religion, and to the deference shown prominent churchmen in connection with our recent war effort?

All these are indeed noticeable features of our time. But what do they show? They show that we are unaware of what is happening, as those were unaware of what was happening who doubtless acted in a like manner when the new religion now called Christian was taking form.

This unawareness is natural enough. A world-wide revolution is not like a clap of thunder that cuts through the silence as with a knife. It is like the coming and going of the seasons, without sharp beginning or end. Every year the seasons steal upon us without our being aware. In September the red maple, that radical of the hillside, turns to scarlet, a herald of what will presently be announced by the other trees also. How many of us realize that autumn has set in and that another year is drawing to a close? Then the hickories turn to bronze and the elms to yellow. A few people now begin to notice the change. But since those arch-conservatives, the oaks, still hold out for green, most people remain oblivious. It takes a cold November storm or an early snow to cause them to wake up to the fact that autumn is well advanced. When they do wake up, the year is on the threshold of winter.

The springtime of our church-religion dates back many hundreds of years. The thirteenth century was its summer. The seventeenth century marked the running up the scarlet flag of the red maple. The eighteenth and nineteenth centuries were the bronze and the yellow of the hickory and the elm. From 1859 on the oaks joined in the pageant, and industrialized science was the cold November rain. Autumn is well advanced, though it may take more stormy weather to make it generally evident. Well, the weather seems stormy enough!

III

Assuming for the moment that such is actually the present state of affairs, why, someone may ask, discuss the subject at all? If it is true that religion regarded as allegiance to the supernatural—and that is the basic demand

of our religions, implicit when not explicit—has been outgrown as we have become better acquainted with nature and human nature, why not forget about those religions and concentrate upon the problem of a good life in a good world? Supernaturalism will go on fighting its slow retreat, retiring from one compromise after another, until it finally and quietly surrenders to a better understanding of what mankind is really up against.

The answer is that we are not permitted to. Habits, customs, institutions outlast the views and conceptions of which they are the embodiment. And habits, customs, institutions strive not only to perpetuate themselves, but to prevent the development of any outlook which threatens them. Although supernaturalism has lost ground as a world-view especially in recent decades, and may confidently be expected to continue to lose ground, it remains deeply embedded in individual and social practices; so deeply embedded that many persons who have no living interest in supernaturalism as such, look upon a naturalistic philosophy of life as an abrogation of all standards of value. And this prejudice draws nourishment, day in and day out, from the teachings of leading supernaturalists who insist that truth, virtue, beauty, good will—all the nobler interests of the human spirit—are without meaning unless defined in terms of a spiritual order which transcends the visible world and the history of man on earth.

Not that institutionalized supernaturalism is the only enemy to be dealt with. There are others. One of these is war. Unless it proves possible to prevent the periodic recurrence of such tragic cataclysms, the good life conceived in scientific and democratic terms—indeed conceived in any terms worthy of the best impulses of human nature—that good life is doomed. Another enemy is the economic system in which the exploiter of human and natural resources is rewarded for disregarding the evil consequences of his ambition. However, both of these deadly enemies of the good life are strengthened by their alliance with institutionalized supernaturalism. Deprived of the support received from this source, they would be much more than they now are. This being true, there is no escape. Institutionalized supernaturalism directly and indirectly works to impair, to undermine, to bring to

naught a naturalistic way of life which is intent upon increasing the satisfactoriness and dignity of daily experience for all men. Consequently, those who believe in this program must defend it and defend it aggressively.

Now what is this way of life? It is a way of life which brings into coöperative unity the scientific spirit and the democratic faith. And what does this mean? It means too much to be stated here even in outline, but two or three things must at least be mentioned. *Man* is thought of as belonging with all other creatures to the great web of life, exalted above the rest by hungers and abilities which enable him to seek and achieve what no other living being we have knowledge of can approximate; hungers and abilities which place in his keeping the progress of intelligence and moral idealism on this planet. *Wisdom of life* is thought of not as something brought from a realm outside, but as issuing from the process of living, from the daily, hourly lives of men and women who make good use of their mental and aspirational potentialities. And the method of investigation and demonstration relied on as being harmonious with these basic principles, is the method developed to high perfection by men of science.

IV

Let us compare this scientific-democratic view with its opposite. I take two paragraphs from the writings of the philosopher Jacques Maritain: The first is from his book, *The True Humanism*. It purports to provide a glimpse into the final meaning of world-history, and to tell us what the life-task of man is in accordance with this cosmic meaning:

The world belongs to God by right of creation; to the devil by right of conquest, because of sin; to Christ by right of victory over the first conqueror, by his Passion. The task of the Christian in this world is to dispute his domain with the devil and wrench it from him.

This triple ownership accounts for "the essential ambiguity of the world and history: It is the common ground of these three together." We must remember that these words were not written by an untutored fundamentalist.

but by one who is called the outstanding Christian philosopher of our times.

The second paragraph is from the recently published book, *Twilight of Civilization*, and from the chapter, "Christianity and Democracy":

The Christian religion is annexed to no temporal régime; it is compatible with all forms of legitimate government; it is not its business to determine which type of civic rule men must adopt *hic et nunc*; it imposes none on their will nor, so long as the higher essential principles are respected, does it specify any particular system of political philosophy, no matter how general, such as that system which occupies us at the moment. But the question which arises here is of an entirely different order. It is a question of fact which concerns the seed that gradually germinates in the bosom of the profane and temporal consciousness itself, under the activation of the Christian ferment. . . . It is a question of knowing, besides, whether at the present moment and under the present circumstances of human history, the chances of religion, of conscience, and of civilization do not coincide with those of liberty. . . .

The attempt to re-establish the supremacy of the Church is not confined to any particular denomination of religion, though more powerful and insidious in some than others; and there are persons in every important denomination who will have nothing to do with it; but wherever it is at work it threatens the one promising possibility now open to us of organizing human intelligence, idealism, and practical effort to advance the happiness and the dignity of mankind. It threatens that possibility because it puts the influence of an allegedly other-worldly institution above any attainable good of man on earth. Every human association and endeavor, social, economic, political, moral, educational, is to be judged with regard to its anticipated effect upon that institution's authority.

In this undertaking we have supernaturalist religion carried to its logical conclusion. If there are religious leaders, Catholic, Protestant, Jewish, who would not accept these authoritarian implications, the reason in all likelihood is that they have not thought out their position to the end. Authoritarian religion and the democratic way of life are incompatible; the absolutism of this religion and the relativism of science are irreconcilable. The type of religion which looks to a realm other than the world about us for criteria of the good life is not a religion

in man's interest. Those who aid in furthering that religion, whether they recognize what it implies or not, are making such contribution as they can toward man's intellectual and moral defeat.

v

Need any one ask why we cannot forget about authoritarian religion and concentrate upon the problem of a good life in a good world? We are not allowed to. Reactionary forces are at work among us—well-organized forces—often under the leadership of able, high-minded, and sincere persons, and they are seeking to take advantage of the present sense of confusion and uncertainty to fasten the grip of a supreme authority, in the name of God, over the whole of human life, although those organized forces reflect an outgrown stage in man's intellectual and spiritual evolution. Should this retrogressive attempt gain the upper hand, it would mean the end of the democratic enterprise and, therefore, the end of the scientific enterprise as well. So far as it succeeds it will block moral progress in the new world that is coming into being.

Three hundred years of scientific development have rendered it impossible for a reflective person to look upon the world in a way which was once justified by what was known. It is the assumption of the authoritarians that the world-view of our ancestors has not been inwardly destroyed, merely elbowed aside, by the scientific world-view. It is there before you, intact and authentic, and if you do not adjust your life to its demands you lack either the necessary brains, or the character, or both. It is admitted that science has made necessary a new conception of the world, but only of its garment of sense-appearances. Science has not touched, we are assured, and cannot touch, the substantial *being* of the world. And that substantial *being* of the world beneath its appearance is what those precocious children of men, in Athens and Palestine and medieval Europe, when the human race was as yet unspoiled by the fuller knowledge of modernity, saw with the eye of Reason and the eye of Faith, and so were able to elaborate a vision of the ultimate values. The search

for wisdom and for ideals—and now more than ever—takes us back to them and to what they saw.

There are moments when any of us may sigh for the simpler days that are gone. There are hours when we would sing:

O wüsst' ich doch den Weg zurück,
Den lieben Weg zum Kinderland!

But you cannot become a child again because you have decided that the childhood world was a happier one than the world of adulthood. And mankind cannot return to an earlier age to escape the responsibilities that are inseparable from the one it is in. The word heathen, in the theological sense, is obsolete. Men have learned that they are one great family. So, too, the world picture in which the heathen raged and imagined a vain thing. That world-picture has faded out in the light of scientific knowledge. To act as if this were not so is merely to confuse and render more difficult the task of those who would live the good life in the world described for them by the best knowledge to be had.

VI

Some of you are acquainted with a philosopher, who lives in Boston, named Dickinson Miller. In him a deep-flowing religious spirit is combined with democratic faith of the most vital kind. And both are persistently tested by what he has called "the conscience of the mind." When reading the writings of many of the leading champions of authoritarian religion, I think of Dickinson Miller—by contrast. The conscience of the mind—that is something conspicuously lacking in Church propaganda. Here is another sample, doubtless not the best that could be found, but by no means the worst. It is thoroughly typical in its attempt to create an impression without taking the least trouble to supply evidence. The monthly magazine, *Current Religious Thought*, in which it appeared, never fails to select for its readers illustrations of thinking similar to this one:

Maybe there is something wrong with John Dewey and nothing wrong with St. John; maybe there is something askew with H. G. Wells and nothing wrong with Vincent de Paul; maybe there is something wrong with Gertrude Stein and something right about St. Gertrude; maybe there is something wrong with progressive education and nothing wrong with the Light of the World. Maybe we had better get back to God.

Yes, maybe there is something wrong with John Dewey and nothing wrong with St. John. But why not a little demonstration in place of an appeal to prejudice? Maybe there is something askew with H. G. Wells, Gertrude Stein, and progressive education, but what are the facts? Maybe we had better get back to God as defined by the authoritarians, but why not a little proof that there is such a God. I suspect that St. John himself would have disdained to use this "maybe" technique. He did not say, "Be satisfied with 'maybe,' and assume that you know." He said, "Know the truth, and the truth shall make you free." He had respect for "the conscience of the mind."

This is a matter of the utmost importance. The spirit of truth and the highest human welfare are inseparable. Where, then, if not among the religious, should loyalty to the most rigorous standard of truth be exemplified? But what do we find? We find that with rare exceptions no respectable effort is made to establish the existence of the supernatural order or the supernatural Being upon which the whole authoritarian position depends; that on the contrary, the existence of both is calmly taken for granted, or is supported by the kind of so-called proof which presupposes what is to be shown. Not only so, but the willingness of many spokesmen for religion to let anything pass for true which is favorable to what they stand for, and to belittle even the most carefully tested knowledge if they find it unfavorable, is a fundamental attack upon the very spirit of truth-seeking. I can think of nothing more important at the present time, important I mean in the moral and religious sense, than a renewal of loyalty to intellectual conscience.

Suppose we grant the greatness of the insights that have come down to us from ancient Athens, from Palestine, from the thirteenth century, does this exempt us from the obligation to win new insights in our own time and to labor for their translation into programs adjusted to our

conditions? Does it relieve us from the necessity of achieving an intellectual, moral, and religious synthesis in a form that will make it feasible to teach it to growing children in our public schools?

VII

What did those do to whom we are admonished to go back? Did they, too, go back to the ancients for their way of life? Or did they seek a fresh vision of what life might be? What, for example, was the attitude of Jesus toward the moral idealisms of the past? He left no one in doubt about his position: "Ye have heard that it hath been said. . . . But I say unto you."

This was the attitude of them all; of Socrates, of Plato, of Buddha, of Confucius, of Aristotle, of Thomas Aquinas, of all of them, all of them in Occidental moral history and in Oriental moral history. They were not ignorant of their spiritual heritage; they were not indifferent toward the moral excellence that had been won; but *the inherited insights started them off, it did not bring them to a stop.* They refused to live on unearned ideals. They set out on ventures of moral discovery. And it is their discoveries which have inspired and guided their fellow men.

There may be other ways of honoring the great men and women in our moral past, other ways of making their insights fruitful in our present lives, and of preserving for our children and our children's children the values we received from our fathers and their fathers before them. But until some of us become acquainted with those other ways we shall trust the best insights of our own time.

The obligation that rests upon us is not the obligation to perpetuate the words or thoughts of the spiritual pioneers of the past or to imitate their deeds. We might try to be original and creative in their spirit; to resist as they did the tempting rewards of acquisitive ambition or vulgar popularity; to be willing as they were to forego the approval when necessary of those who sit high in the financial, political, social, or academic world.

We are entering a new world. This is irrefutable fact. It may turn out to be a better or a worse world than the one we are leaving. The chances for improvement are

not bright if we refuse to face, as squarely and realistically as we can, the fact that earthly conditions are responsible for human ills, and that the ills can only be remedied through changes in those conditions. There is no guarantee that we shall succeed even then. But we are in that case justified in hoping that we can move toward a social arrangement in which all men, whatever their race or status, being brothers in need, shall, as brothers, share in the fullest satisfaction that life on earth can be brought to yield.

A distinguished American poet, Archibald MacLeish, in criticisms of his countrymen for their emphasis upon physical comfort, has eloquently voiced an ideal which is popular among philosophers who are anxious to protect philosophy from material contamination. "The real issue," according to Mr. MacLeish and these philosophers, "is an issue to be fought in the hard and stony passes of the human spirit—the strict Thermopylae of time where even if a man is killed, he cannot die." It is exactly against this manner of dealing with the situation, against this type of philosophy, that I am attempting to speak. The real issue, I am trying to say, is to be fought in the hard and stony passes of existing conditions where if a man is killed, he is dead as a door nail and no one cares a damn.

JOURNAL OF SOCIAL PHILOSOPHY

CHAPTER 9

Scientific Humanism*

I

All humanisms have one thing in common. It is the ideal of realizing mankind's completest development. From here on they diverge. The most far-reaching disagreement turns on the question whether man is or is not absolutely distinct from everything else in the hierarchy of earthly existences. It is at this point that the designation of one humanism as scientific takes on significance.

What does scientific mean in this connection? It means that human beings are viewed naturalistically. They are placed in the natural world along with the lower animals, plants, rocks, minerals, and star clusters. Their intellectual, moral, and aesthetic powers, their ideas of decency, their feelings of good will, all they are and aspire to be is looked upon as the consummation of a long evolution from the animal status. Scientific humanism is a form of naturalism.

This is part of the answer. The rest of it is that the scientific humanist is wholeheartedly committed to the use of scientific method. He favors its extension to moral and social problems of every kind, and he believes that

* From *The Antioch Review*, Winter, 1943. Copyright, 1943, by *The Antioch Review, Inc.*

a correct understanding of scientific procedure permits this to be done. As a rule this procedure is so narrowly defined that it cannot be applied to human beings in their actuality, to human interests as they are experienced, or even to the world of which human beings are aware. Take Sir Arthur Eddington's example of the elephant sliding down a grassy hillside. From the viewpoint of physics the elephant fades out and is replaced by the reading of the pointer indicating a certain mass. The hillside disappears and its place is taken by the reading of a plumb line against the divisions of a protractor. In the same way the descent becomes a pointer-reading on the seconds' dial of a watch. The result is, says this professor of astronomical physics, that what really slides is a bundle of pointer-readings, and the sliding is a function of space and time measures. There is simply no elephant to slide down a hill and no hill for an elephant to slide down. "The whole subject matter of exact science," as thus conceived, "consists of pointer readings and similar indications."

Ordinarily, when we think of science, it is this kind of science we think of. Our notion of scientific method is our notion of what goes on in physical or chemical laboratories, including what we believe to be the special kind of subject matter dealt with in them. Consequently, we conclude that if man is to be studied scientifically he must be reduced to a mindless, indeed lifeless, concourse of material entities, to atoms, electrons, or even to more abstract elements. And a purely material assemblage or a pattern of abstract entities is certainly anything but human.

Suppose, however, that we broaden our idea of science, as in the end I think we must, to take in every field of knowledge where a sufficiently painstaking effort is made to establish conclusions on a thorough-going examination of relevant fact. In that case the word "scientific" takes on a meaning to correspond. We may then say that a method of investigation is scientific to the extent that it exemplifies the ideal of objective verification. Objective verification is of course a kind of technical shorthand. It has to be broken down into a statement of particulars, and I shall presently attempt to enumerate those particulars. But before undertaking to do this it may be well to

note that a certain broadening in the meaning of scientific has taken place in the development of science itself.

There appears to be general agreement that for the most perfect exemplification of scientific method we must go to physics. From there on down through chemistry, physiology, biology, and the rest, factors are thought to intrude which render the investigation, from the standpoint of exactness, more and more impure. For that matter, even physics is impure when compared with mathematics. Shall we say then that, strictly speaking, there is but one science? Some have made just this claim. And many who do not say so, act as if they believed it, for they try their best to bring the material with which they deal into the closest possible resemblance to that of physical science, even though in the attempt they completely distort their proper subject matter.

This surely creates more problems than it solves. For one thing, if physics, chemistry, physiology, biology are not sciences, what are they? Yet if the meaning of scientific need not be limited to the exactest science, but may designate types of investigation which fall short of scientific methodology in its purest form, what ground is there for arbitrarily ruling out any type of inquiry that aims at objective verification? For another thing, if we insist upon holding to the conventional conception of scientific, in what terms shall we make a proper and much needed distinction between loose and rigorous thinking in the solution of problems not dealt with by the natural sciences?

In line with this revised conception, here are five requirements of objective verification:

(1) Formulation of only such problems as can be solved by an appeal to facts in the external world. (2) Gathering of facts and, so far as possible, all obtainable facts pertinent to the problem. (3) The subjection of facts, inferences, hypotheses, generalizations, to a test admitted to be decisive, publicly applicable, open to the scrutiny of friend or foe. (4) Progressive building up of verification in which different investigators participate. (5) Recognition of the provisional result of even the most exacting demonstration, hence the relativity of all knowledge.

Of these requirements, the one of chief significance is the third. Probably all the others would follow from the appeal to a "publicly applicable" test, rigorously inter-

preted. Of course everybody who engages in an investigation worthy of the name appeals to facts and uses criteria to determine what knowledge his facts yield. Not everybody, however, appeals to the kind of facts or uses the kind of criteria of knowledge which can be judged by others than the investigator himself. On the contrary, certain claims to the possession of truth, regarded as the highest truth at that, are frankly declared to rely on criteria which are and must be strictly private. Moreover, there are so-called facts and truths which have logical force providing they can count on a "will to believe." They are powerless to convince a critic who demands to be "shown." In contrast with attitudes like these, scientific method calls for willingness to try conclusions by the application of a test that is recognized as definitive whatever may be the hopes or fears of investigator or critic.

A simple description of scientific procedure by a man of science will make all this clear. It occurs, as it were incidentally, in a discussion by Lewis G. Westgate of a geological problem, and seems to me admirably put:

Science is a growth, a series of approximations; as it advances some old views are discarded, new views introduced. The discarded views are seen in the light of fuller knowledge to be in error. Inadequate approximations would be a better characterization; they were the best formulation the earlier science could make.

The individual worker

builds on the work of his predecessors, sometimes on their errors. By his own field work and thought he corrects some of these errors and adds new material. . . . His published results bring the matter out into the open for discussion and criticism by his fellow workers. His errors can be challenged by other facts unknown to him. His statements may suggest other studies, which may or may not corroborate his views. And so science advances by a process of trial and error, ever working toward a more truthful generalization.

There it is: the collection of data or facts in the outside world; the suggested solution brought out into the open to be tested by critical thinking and active field work; the development of a conclusion supported by coöperative examination and verification; the recognition of the approximate truth of the best established position. Now why should anyone doubt the feasibility of adapting this

technique to every field where problems are to be solved? The difficulty of its application grows, to be sure, with the irreducible complexity of certain problems, and with the presence in men of prejudicial habits of thought or feeling which interfere with objective inquiry. But this in no way invalidates the claim that, properly understood, scientific method is applicable to areas from which it is conventionally thought to be barred.

Summarizing this phase of our study we may say that the scientific humanist sees no valid ground for believing men and women to be isolated or insulated creatures in nature. On the contrary, he regards them as strictly integrant to the great complexity of things, living and non-living, which is commonly spoken of as the world. In conformity with this naturalistic interpretation the scientific humanist rejects both pure Reason and Revelation as sources of light for the understanding of human nature or the art of life. For his part he tries to emulate as best he can in his own field of interest the temper of mind and the workmanship of scientists.

II

We turn now to the other word in the title—humanism. I was just saying that the scientific humanist looks upon man as belonging altogether to the order of nature. I did not say that he thinks man identical with the lower animals, not to speak of lifeless matter. The fact is that no other humanist so consistently exalts man, or looks with equal generosity upon his *humanitas*, upon those attributes which differentiate man from all other living creatures. In a word, the scientific humanist does not lose any of his interest in the human aspect of human nature because he aspires to be scientific in his thinking.

Critics make short work of this avowed dual responsibility. Few of them think it worth while to examine the position. They simply rely upon derogatory names as if these had power to kill. The critics acknowledge that science has a large place in modern life. Sometimes they even advise that education should by all means introduce the student to some knowledge of science. But what do they expect from science? This is their answer: "From scientific investigation we may expect an understanding

of scientific knowledge. We are confusing the issue and are demanding what we have no right to ask if we seek to learn from science the goals of human life and of organized society." Rarely do we find anything beyond this bare assertion. Any attempt to extend scientific method beyond the physical substance of things is dubbed "the cult of scientism," a "cult" that "does a disservice to both science and civilization." Perhaps that should kill scientific humanism on the spot, or even better, cause it to crawl off to die in some out-of-the-way corner.

It is, however, an interesting and happy fact that people will try to do, and sometimes succeed in doing, things they are told cannot be done. Either they do not know or do not believe that the things are impossible. The scientific humanist is one of those people. In spite of reiterated arguments purporting to show that the very attempt is irrational, he persists in trying to extend scientific thinking to every kind of individual and social problem. And what is more, he succeeds. Let us consider two or three great human goals or ends, observe how he reinterprets them, and then decide whether his view is as sterile culturally as the opponents charge.

III

Among the great goals of man's long endeavor is truth. In one of his poems Stephen Crane tells of two travelers. The first traveler calls truth a rock, a mighty fortress, and claims that he has often been to it, even to its highest towers. The second traveler likens truth to a phantom, which, though he has long pursued it, has always eluded his grasp. "And I believed the second traveler," says the poet.

This disjunctive proposition—that truth is either absolute or there is no truth at all—puts before us an article of popular theory as widely held, I believe, as any that could be mentioned. Now a little observation of people shows that they hold to this disjunction in a curious manner. If a man feels sure that a belief is true, and another feels as sure that the contrary is true, and neither of them knows of any way to adjudicate the disagreement, both of them will as a rule agree that a thing may be true for one person and untrue for another. In doing so

each takes the position that truth is absolute and, at the same time, that there is no truth at all. For surely a type of truth which rests solely upon personal conviction is about as variable as you please. Between such truth and truth as a shadow or a phantom there is nothing to choose.

The scientific humanist refuses to play fast and loose with truth in this manner. He places too high a value on it to let it go at that. Convinced that it is important for men to have *true* ideas, and that *untrue* ideas do them harm, sometimes irreparable harm, he thinks it necessary to reach a better conception of the truth situation. And as he looks about he discovers that the truths men live by are not in either of the classes referred to by Stephen Crane. They are not true in any *absolute* sense, yet are not mere *fantasies*, either. They are as true as the tests by which they are established are reliable; no more true, but also no less true. That is what is meant by calling truth relative; it is dependent truth.

Many persons seem to think that relative truth means less than truth; a sort of truth; pseudo-truth. What it actually means is *related* truth; truth in the contexts of some kind of ongoing experience and in conformity with the kind of measure used in that context. For instance, there is no *absolute* quart, pound, or inch floated down from heaven to some receptive spirit, and no one thinks there is; yet no one takes the position that quarts, pounds, inches may be anything anyone pleases. We insist upon having true measures of value where quarts, pounds, inches are used in our dealings with one another. And if any dispute arises, we can go to the place where the master-standard is on exhibition.

That we have accurate weights and measures for meat, groceries, milk, potatoes, gasoline, cloth, boards, and such things, and not for what we call spiritual attainment or for measuring progress in the good life, is an accident of our history. We have done "field work" in the one case and not in the other; we have appreciated the advantage to all concerned of specific and common means of verification in buying and selling, while we have generally remained satisfied with abstract, individual, frequently purely verbal verification in ethics, religion, and philosophies of life. Possibly this proves that most of us think more highly of the business of buying and selling

than we do of mental development and growth in character. Or the explanation may be that it is considerably easier to come to an agreement on tests of quantity than of quality.

At any rate, the scientific humanist takes the position that when something is spoken of as true it is presumed to measure up to the test by which the true is distinguished from the untrue in some field of operation. He therefore does not spend time trying to make contact with Truth as a spiritual essence which hovers above the earth out of reach of human contamination. He labors to invent and put into practice better and better truth tests, especially in areas of human interest where the need to do this has received and still receives little attention. He does "field work" in the service of social idealism. In his effort to improve truth tests he shows his scientific bent; his humanistic bent is shown in the determination to extend the use of such improved truth tests to all the phases of individual and communal experience where the better potentialities of human beings may either turn out well or come to naught.

This buckling down to the task of furthering the true as against the false in the big and little affairs of everyday, although it is not highly regarded by the devotee of absolute and abstract Truth, happens to be the kind of truth-concern upon which progress in the attainment of truer beliefs, attitudes, and ideas depends. Truth from this point of view is a collective name for a sum of particular truths, as true as they are and no truer. Since the scientific humanist consistently endeavors to improve the standard of the true precisely where there is greatest need that this be done, it should be obvious that truth has a place of unusual honor in scientific humanism.

IV

Another of the great human goals is moral character. In that impressive book, *The Dawn of Conscience*, J. E. Breasted undertakes to show how the idea of right, as distinguished from wrong in the ethical sense, had its origin in Egypt 4,000 or more years ago. Early in Occidental history authority in the realm of moral ideas and ideals was taken over by church religion. In the course of

time secular life took it away again. But long association with theology left its mark. The belief, not to say illusion, for which this association is responsible, that morality must be defined and vitalized "from on high," is still with us. Likewise the alleged antagonism between character and wants or desires. Innumerable people continue to believe that there is something shameful, if not pathological, about desires. What they spontaneously think of when they hear the word moral or immoral is sex. Sex desire, taken to be the most unruly, leaps to the foreground of the mind because the inherited conception of morality is essentially the mastery of desire by something in man higher than desire.

The scientific humanist does what he can to liberate himself from this prejudice against desires. He accepts with hope the fact that men and women have wants and desires. He believes that the human energies called desires are the only driving power we have to help us toward the good life—the happy life as well as the noble life. The good life involves more than desires: intelligence, knowledge, imagination, and at its best, creativeness of a high order. But desires are the life of the whole business. Not to recognize this openly and frankly has no end of unhappy results. Desires are made to work themselves out surreptitiously, abnormally. Maliciousness, coarseness, brutality can cloak themselves in sanctity. The fanatic gets the opportunity to step forth as moral dictator.

Does the scientific humanist then refuse to divide desires into good and bad? In one sense, yes; in another sense, no. Anything a person wants he wants because it appears good. That is why he wants it. I say "appears," rather than "is," for no better reason than to avoid immediate disagreement. Whether it is wants or needs or obligations he goes out for, he believes them good to have. If he believed them bad to have he would not want them. However, everyone soon finds out, and finds out again and again, that the wanted, the good, can not be isolated from antecedents and consequences. These antecedents and consequences may in certain cases not be wanted at all. And sometimes upon reflection the not-wanted aspect so outweighs the wanted that the offering as a whole fails to appeal and so is not regarded as good. And every person soon finds out that his own wants and the wants of others

overlap in ways to further or to thwart each other. It turns out, moreover, that every individual is interested in wants of other individuals, wanting some of them satisfied and some not. Thus the wanted and the not-wanted are frequently tied up in one package.

A desire is morally bad when the desirer insists on having what he wants in disregard of his want's unwanted concomitants. A desire is bad when the desirer insists upon having what he wants no matter what holes he tears in the fabric of human interdependence without which no life can approach all-over satisfactoriness.

This interpretation of character and the good life implies that everybody is desirous of finding life as livable as possible; that the goal of life, to put it in a word, is happiness. Is this a valid assumption? There are those who deny it. Alexander Meiklejohn, for example, contends that the objective is not happiness but a personal quality which he calls "excellence." His moral philosophy is socially conscious, clean and fine-spirited, free from the conceit of learning, high-minded and intentionally austere. I introduce a quotation from his book *What Does America Mean?* in order to sharpen the humanistic argument for the dignity of desires.

In Mr. Meiklejohn's view, "It is not imperative that any individual, or any nation, or even the race itself, should continue to be happy, should even continue to exist. It is imperative that so long as we live, we do so with taste and intelligence, with fineness and generosity." And the reason is this: "Many things are worse than unhappiness. But nothing is worse than being contemptible." The scientific humanist agrees with the college student who, having read Mr. Meiklejohn, made this comment: "Yes, let us include among our desires the desire for taste, intelligence, fineness, generosity, for they are helps in the production of happiness. Many things are worse than being contemptible. But nothing is worse than being unhappy. The worst thing about being contemptible is that it makes you so damn unhappy."

Looking back over this section, it is obvious that the analysis is over-simple. Possibly it is not too simple for the present purpose, which is to spotlight the distinctive element in the moral attitude from the standpoint under review. No desire liveth to itself or dieth to itself. At bot-

tom the difference between the moral and the immoral or non-moral attitude is the presence in the former, and its absence from the latter, of scrutiny and appraisal of desires with regard to their effect upon what was just called all-over satisfactoriness. Satisfactoriness may of course be envisaged broadly or narrowly; may be restricted to pleasurable excitement, physical convenience, social prominence, the exercise of power, or include appreciation of art, music, literature, religion, philosophy. It may be bounded by the welfare of the self or the family, or be touched by interests as wide as the world. While the practical necessity of acting will inevitably impose limits, the measure of moral personality is sensitiveness to the consequences of desiring what is desired. Naturalistic in outlook as scientific humanism is, and thus at pains to vindicate desires, it is, being also humanistic in outlook, at equal pains to emphasize the need for criticism and discipline. The ideal is that desires shall spring up spontaneously, freely, and differently in response to the richest, most various goods and that this dynamic exuberance shall be matched by well developed habits of critical appraisal and intelligent choice.

We conclude, then, that the moral ideal here outlined cannot fairly be described as a cheap, superficially conceived, or easily realized ideal. To commit oneself to it is to undertake a difficult, complicated, often elusive assignment. Even moderate success in it calls for thoughtful application and takes time. One may know at a given moment what it is one wants, but whether it would still be wanted were there a looking before and after, whether the wanted is also, when well considered, the wantable, that is not so easy to be clear about. Still, with some people it becomes second nature to seek a genuinely richer, worthier, happier life-experience, and they show remarkable expertness in discovering the right means and ends. It would be a long step in advance if public education naturally introduced the young to this way of life and prepared them for effectiveness in it. There are teachers who do just that, and some day they may be the majority. Some day, too, the world of affairs may encourage instead of discourage moral progress. And while in some respects each one must define and realize the good life for himself, no one can attain his moral growth except

in reciprocal relationship with other human beings, so that there is the additional problem of making our way together toward a social arrangement which provides the indispensable opportunities.

All this is part of the scientific humanist's moral program. It is an ironical fact that the humanist who regards it as essential that all wants be related to disciplined taste, and who is everlastingly stressing the need for informed criticism of the self and of society, should be accused of working against moral idealism and moral integrity.

v

Now what of man's religious interest? Does this humanism unite the religious and the scientific outlooks? The answer depends, as answers so often do, on how the terms are defined. We have adopted a meaning for *scientific* and shall have to do likewise for *religious*.

No simple description can do justice to religion even as this has been formulated and practiced in the Occident. But a central feature of our whole religious tradition is its positive relation to the supernatural. To be religious has meant to seek companionship with a friendly being believed to abide behind or within the drift and waste of temporal events. Possibly there is actually a continuity between the "Friend behind phenomena" that men seek, to borrow Gilbert Murray's idea, and "the pack which a dog tries to smell his way back to all the time he is out walking." "It is a strange and touching thing," says Mr. Murray, "this eternal hunger of the gregarious animal for the herd of friends who are not there." "And it may be," he continues, "it may very possibly be," that our religious searchings are at bottom "the groping of a lonely-souled gregarious animal to find its herd or its herd leader in the great spaces between the stars."

Well, if this reliance upon a Cosmic Friend is what religion must be, because that is what religion in our region of the world has been, then scientific humanism can touch religion as a line can touch a circle, but the two cannot interpenetrate to form a blended philosophy. There are, however, other definitions of religion. One of these is readily seen to have close affinities with the humanism discussed in this paper. The world as described

by science is accepted as such and this very description is made the ground for the highest human aspiration. It is surely an invitation to religion which W. Macneil Dixon extends to the reader in these words from his book, *Thoughts for the Times*:

When I am told that throughout the realm of nature there is "no tendency that makes for righteousness," that justice is nowhere to be found there, that in her soil the tree of justice refuses to take root . . . I do not find nature ennobled and man humiliated. . . . Quite the reverse. To me it seems to exalt him to a plane immeasurably far above hers, and moreover to provide him with an aim, a purpose, a cause, an inspiration that fires the blood and hardens resolution. If justice be no concern either of nature or of the gods, it is the more preeminently ours. . . . If this world be without justice it is man's unique privilege to place it there—a superb design, an enterprise the immortals might envy, yet have left to mortal hands.

A similar view of religion has been defended with eloquence and learning by A. E. Haydon for a quarter of a century. Essential religion, in his view, is and has always been the shared quest of a good life in a good world, made ever more possible by advancing knowledge and now especially by science. Says Mr. Haydon in his book, *The Quest of the Ages*:

In contrast with the great believers who imposed their noblest dreams by faith upon the universe, there have been men in all cultures who clipped the wings of their hopes and built a more modest ideal in the everyday world of fact. Though life might not be altogether lovely, they made the best of life. With no hope of help from gods, and no faith in life immortal, the beauty of human comradeship became more precious.

It is encouraging, therefore, and of deep significance to religion, that a common refrain runs through the writings of modern thinkers. The notes of the melody are freedom, democratic opportunity, co-operative individualism, meliorism, internationalism. The march of religions moves toward the Great Society in which all individuals will have a fair chance for the joy of living, and personal satisfactions will blend with social responsibility and creative power.

An inspired statement of this nontheistic, socially oriented religious attitude is condensed into a paragraph at the end of John Dewey's *Human Nature and Conduct*. These four sentences bring the paragraph and the book to end:

Within the flickering inconsequential acts of separate selves dwells a sense of the whole which claims and dignifies them. In its presence we put off mortality and live in the universal. The life of the community in which we live and have our being is the fit symbol of this relationship. The acts in which we express our perception of the ties which bind us to others are its only rites and ceremonies.

Personally, I have never been willing to stop at this point in defining religion, not because of its naturalistic, nontheistic, socially dedicated aspect, but because something seems to me left out which is more profoundly characteristic of the religious mood than any kind of special knowledge, devotion, or service. This is a response to the awesome and mysterious in life and the world. A positive response to the awesome and mysterious has had a central place in the most various religions throughout religious history. Without it religion seems to me to lose its differentiating quality and to become identical with morality, differing from it, if at all, in emotional tone. In theistic religions and in religious mysticism the response is not so much to the awesome mystery itself as to the Being behind the mystery, even though what this Being is may only be statable in symbols or not at all. In the nontheistic religion with which we are concerned the response is to the mystery as mystery. The difference between these attitudes is deeply significant, but there is at the same time a relationship between them which justifies the application of the term religious to both. At any rate I believe it necessary to add another quotation to those preceding:

I have not said and I have no intention of saying, that the nontheist must limit his interests to what can be weighed and measured, intellectually delineated, or presented in some embodied form with clear outlines; that he must never allow himself to stray into the land described by Virginia Woolf, where words "fold their wings and sit huddled like rooks on the tops of the trees in winter." . . . We need to keep a window open toward the uncharted.

A conscious awareness of this mystery does healing work on the inward man. It is the healing work of acknowledged ignorance in the revered presence of that which eludes comprehension—the incomprehensible in each other, in the life we are called upon to live, in the great cosmic setting that reaches from our feet to the infinities.

At all events, whether this sense of mystery is a religious indispensable or not, humanists of the scientific per-

suasion reject the dualism which assigns to religion final authority in the realm of value and to science final authority in the realm of fact. They refuse to divide the experienced world into two realms, one of which is the locus of fact and the other the locus of value; and if they recognize any authority as final, which in a manner of speaking they may be said to do, it is not any religious or scientific interpretation of the cosmos; it is man's unremitting search for a livable life and the stubborn conditioning facts of human nature and the natural and social environment. Scientific humanists share in the "quest of a good life in a good world," and hold steadily to the conviction that progress toward this authoritative end is contingent upon the best kind of objective thinking whether the question is one of fact or of value. Which is another way of saying that in their philosophy the scientific and the religious spirit are united in a common enterprise. Matter and spirit may be enemies, but they may also be allies.

VI

We come to the end of this sketch with whole areas of important endeavor left untouched. Scientific humanistic principles and methods are of course applicable to those omitted areas. Some persons will nevertheless remain unpersuaded. They are sure to complain that scientific humanism is not enough. And the complaint is understandable. Scientific civilization, so widely extolled, still shows glaring faults. Innumerable people get little indeed out of living, and all they are promised in the scheme of life most prominently and alluringly set before them, even could they attain it, is far less than the human spirit craves. Can we take pride in the global strife which scientific civilization has made possible? Are we to enjoy the spectacle of millions of human beings deliberately engaged in killing each other? Is there anything reassuring in a 'colossal waste of economic goods or in the destruction of the best that artistic genius has achieved through centuries of labor? No, there is nothing unnatural in the conclusion that any view which is allied to scientific civilization is not enough; that to be really adequate a way of life must transcend life, must make

good its shortcomings by laying hold upon the realities of a promised experience that is to begin when the earthly experience is over.

The complaint, I repeat, is understandable, but it is a pointless and futile complaint unless a better philosophy can be shown to be available. What if this is a vain hope? What if it is an unrealizable dream? What if scientific humanism, although it does not set before us all that can be imagined, does offer the best we can actually get? "Impostor for impostor," George Bernard Shaw flippantly declares, "I prefer the mystic to the scientist—the man who at least has the decency to call his nonsense a mystery, to him who pretends that it is ascertained, weighed, measured, analyzed fact." Others assert, "There are no atheists in foxholes," as if this were complimentary to God. A gull landing on the head of a man adrift in a rubber boat is supposed to have established theistic cosmology. Well known theological philosophers urge a return to a time when men are said to have preferred spiritual worth and inner peace to physical comfort and outer power. But Shaw's irresponsible witticism is not quite a philosophy of life. Foxholes are at best temporary domiciles. Gulls are not unfailingly responsive to prayer. The men on the raft with Seaman Izzi called upon God in vain. Two of them finally died of exhaustion, and the three who survived were not picked up in answer to prayer, so far as one can tell. As for returning to the theism of the past, the clock of experience cannot be turned back. It has never been done in human history.

If wishes could make universes we might have the one we want and exactly as we want it. But we have learned a few things in the last three hundred years, and it is just possible that in the light of what we have learned scientific humanism will have to be enough. Super-earthly idealism was once compatible with the best established knowledge of the day. For better, for worse, our ancestors ventured beyond the walls of that knowledge and the gates were shut upon their descendants forever. Truth, goodness, beauty, individual personality, these remain and must always remain among the primary objectives of a life in search of lasting happiness. All of them, however, have had to be sought in a vaster world because our forbears refused to stay at home. And every value

of life must henceforth be sought in the strange new world that is shaping itself about us.

One of the foremost educators of our time, Boyd H. Bode, has long been telling college students, prospective teachers, that the supreme contemporary issue is whether the democratic way of life as a moral system can stand on its own feet. The choice, as he sees the situation, is between a naturalistically based democracy or something worse, not something better. Since he began life in Iowa I cannot believe that this is a prejudice to which he was conditioned as a boy. He could scarcely have picked it up during his college days in Michigan or as a graduate student at Cornell. I have not consulted him to find out, but the probabilities are that, trained as he had been in the traditional religious outlook, exposed as he then was to naturalistic modernity, and sensitive to both influences, he grew to appreciate the fact that nothing can in the end save the great ideals of the human spirit but their profound reinterpretation. In setting forth that reinterpretation he became a pioneer of scientific humanism. The persistent theme of his lectures and articles and books has been the many sided problem of how to increase the meaning and joy of life on earth by making use of the best intellectual and moral tools. In the educational philosophy of this keen, most clear-headed and mature American we have a striking and happy illustration of the kind of high-mindedness and objective-mindedness that can work hand in hand in the world as it has now to be faced.

So it all comes to this. Scientific humanism is not a bleak materialism and it is not a superstitious or an intellectualized spiritualism. The scientific humanist does not pretend that every experience of life can be forced into a test tube or that every interest can be weighed on a scales. He knows that something in everything always escapes the technique of measurement. It must be directly appreciated or go unnoticed. And when he contemplates the whole of things he exclaims as Heraclitus did when philosophy was young: "Nature loves to hide." He says with Gilbert Murray who belongs to the present age: "The life of man can be divided, like the old maps of the world, into the charted and the uncharted. The charted is finite and the other infinite." But he knows also that

there is no way of escaping the new world-order or the new moral and intellectual climate, and that man's aspirational life must adjust itself to these conditions or lose its redemptive power. Scientific humanism is the name for his determination to stand up to the task and the opportunity.

The responsibility of philosophical inquiry is to help release and mature the often pent-up, half-articulate yearnings of men to enrich the quality of their existence, and to aid in discovering the personal and social instruments through which these yearnings may achieve some increment of substantial realization. The cause of philosophy is the advancement of the common good, or philosophy is a social futility.

JOURNAL OF PHILOSOPHY

CHAPTER 10

Science and the Higher Life*

I

There can be no reasonable doubt that the thoughtful person's first contact with the scientific point of view is disquieting. It ushers him into a world of universal, rigid, inexorable law, indifferent alike to his laughter or his tears, and posits this as the *real* world. From the scientific point of view our relations to the universe are, as Josiah Royce says, "relations to an essentially foreign power, which cares for our ideals as the stormy sea cares for the boat, and as the bacteria care for the human organism upon which they prey. If we ourselves, as products of nature, are sufficiently strong mechanisms, we may be able to win, while life lasts, many ideal goods. But just so, if the boat is well enough built, it may weather one or another passing storm. If the body is well knit, it may long remain immune to disease. Yet in the end the boat and the human body fail. And in no case, so this view asserts, does the real world essentially care for or help or encourage our ideals." For this reason most men and women find the introduction to science a chilling experience—much as if they had entered a damp cavern from a sunflooded landscape.

And what of further acquaintance with science? Perhaps our thoughtful person reads the popular essays dealing with scientific method and scientific knowledge appearing in the newspapers and magazines. The outstand-

* From *Things and Ideals*; an essay in functional philosophy by Max C. Otto. Copyright, 1924, by Henry Holt & Company.

ing propaganda of these deliverances is the need for a mechanistic conception of life. "Let us consider every man and woman an apparatus," is the plea; and let us study how to secure the desirable reactions from them. "If in an apparatus we want to induce an electric current," says one of these popularizers, "we proceed to apply the stimulus by mechanical means. If the current does not generate we know there is something wrong with the machine. Under the right conditions and with the proper stimulus, a current is sure to be generated."

II

Exactly so with human beings. "Men and women are machines, vastly complex, but operating under definite laws; and the golden rule to a better understanding of them is to learn the nature of their (physical-chemical) reactions." All that stands in the way of a new dawn in art, literature, social relations, life in general, is our perversity, our obstinate refusal to reduce every feature of life to a scientific basis. With science applied universally we shall be able to secure the perfection of life with the directness and certainty of all mechanical processes. We shall secure good taste in art by inciting the proper esthetic response, good will among men by arousing the sympathetic mechanism, intelligent behavior by stimulating the judgment apparatus. We shall provide the requisite stimulus and get the inevitable response, as we now get light by turning a switch.

There is a certain fascination about the scheme. In the first place, it is simple, and simplicity exerts a singular power over the human mind. Then, too, it appeals to the imagination. One pictures the earth conveniently covered with a population of perfect human reactors, supplied, perhaps by wireless from a central stimulating station, with the necessary stimuli for all the needs and wants of life. How different from the present chaos, confusion, and cross-purposes! Yet somehow men turn from this gigantic mechanical-toy conception to something less perfect but more human. They are convinced, whether they feel qualified to prove it or not, that in such a universe not only is the material order indifferent to human values, but values in any vital sense disappear.

And suppose our thoughtful person looks deeper. Suppose he considers the two most conspicuous successes of applied science, industry and war, what then? Undoubtedly the application of science to industry has accomplished marvels in the way of production and distribution, and consequently has added to man's physical well-being. It is a reiterated commonplace that all but the poorest men and women today enjoy physical comforts of which kings and queens were deprived a century or two ago. But scientific industry has cost a price. It has cost the enslavement of millions of human beings to a manner of life which renders the love of truth, of beauty, of goodness, all but impossible. Certain people are fond of retorting that the masses do not greatly miss these spiritual values. The retort is only partially true; and in so far as it is true it shows how wretched the state of the masses is. Appreciating this aspect of present-day industry many people have come to suspect that Samuel Butler was not joking but uttering a profound truth when he predicted the ultimate dominion of machines over men. I quote his prediction from *The Note Books*: "We take it that when the state of things shall have arrived which we have been above attempting to describe, man will have become to the machine what the horse and the dog are to man. . . . Day by day the machines are gaining ground upon us; day by day we are becoming more subservient to them; more men are daily bound down as slaves to tend them, more men are daily devoting the energies of their whole lives to the development of mechanical life. The upshot is simply a question of time, but that the time will come when the machines will hold the real supremacy over the world and its inhabitants is what no person of a truly philosophic mind can for a moment question." Looking back over the past record of scientific industry or forward over the prospect, the man concerned for the life of the spirit can gather little hope. He does well if the survey does not cause him to lose hope altogether.

III

As to science and war, the situation is yet worse. . . . In the leading nations the best scientific genius is di-

verted, where possible, to the discovery of some new means of bringing swift and utter destruction to the prospective foe, combatant and noncombatant, man, woman, and child. The last few years have given a new profundity to George Gissing's vision:

I remember, as a lad, looking at complicated machinery with a shrinking uneasiness which, of course, I did not understand. I remember the sort of disturbed contemptuousness with which, in any time of "examinations," I dismissed "science papers." It is intelligible enough to me now, that unformed fear: the ground of my antipathy has grown clear enough. I hate and fear "science" because of my conviction that, for long to come if not forever, it will be the remorseless enemy of mankind. I see it destroying all simplicity and gentleness of life, all beauty of the world; I see it restoring barbarism under the mask of civilization; I see it darkening men's minds and hardening their hearts; I see it bring a time of vast conflicts, which will pale into insignificance "the thousand wars of old," and, as likely as not, willwhelm all the laborious advances of mankind in blood-drenched chaos.

Facts like these are responsible for the prevalent impression of the spiritual ruthlessness of science. But is science really responsible? Is science to be held accountable for the superficial deliverances of zealous popularizers or for the generalizations of individual scientists who, looking up from their microscopes, test-tubes, measurements, formulas, construct the fullness of things in harmony with their professional bias? The answer is obvious.

So, too, with regard to the application of science to life. The moral responsibility for the results of such application rests not upon science but upon the men who direct its employment. Science, like every other expression of human genius, lies open to the danger of exploitation; and the admitted spiritual devastation growing out of scientific industry and scientific warfare is the effect of this exploitation on a grand scale. . . .

We must go back to the men who employ science as a means for attaining the ends they seek. In so far as the application of science to life has brought havoc to man's spiritual interests the responsibility rests upon those of our leaders who show no concern for these interests, and upon a public which persistently mistakes the savor of sentimentalism for the taste of spiritual

reality, and, thus diverted, plays into the hands of the men who gamble for stakes involving the ruin of mankind. It will clarify the issue and abundantly reward the effort if we distinguish between science and the ambitions of men who, themselves not scientists, exploit science for ulterior ends. . . .

IV

The pass to which we have been brought is that science and the higher life are incompatibles. If this conclusion is well founded there is nothing which could be more important for us to know and to face squarely. In certain quarters, as we have seen, the antagonism is declared to be entirely due to an unfortunate misunderstanding. Science and religion are said to be in perfect accord. This position has recently received considerable publicity in the daily press, in more serious periodicals, and in books. We must review this angle of the argument before we can claim to have examined the question.

One of the most interesting statements of this position, echoes of which have reverberated from many quarters since its publication, is that of the eminent biologist, J. Arthur Thomson, of Aberdeen University. "Our view," he writes in his *Introduction to Science*, "is that science and religion are incommensurables, that there is no true antithesis between them. Science aims to describe things as they are and as they have been, and to discover the laws of all processes; it has definite methods of observation and experiment; it has its own 'universe of discourse' which does not include transcendental concepts and offers no ultimate explanations." Religion, on the other hand, "is evidently something altogether different from Science; it is beyond the tide-mark of everyday emotion and it is on the far side of intellectual curiosity." The language of religion "is not that of the street, nor of the studio, nor of the laboratory. And just as it is impossible to speak two languages at once, so it is a false antithesis to contrast science and religious interpretation—they are incommensurable."

Nor can man find abiding satisfaction, according to Mr. Thomson, in the voices of Nature alone. "Invigorating,

inspiring, and instructive they certainly are, but they are full of perplexities, and it is with a certain sad wistfulness that we hear their echoes dying away in the quietness of our minds like the calls of curlews on the moorland as they pass farther into the mist. Happy, then, in that quietness are those who have what Sir Thomas Browne called 'a glimpse of incomprehensibles, and thoughts of things which thoughts but tenderly touch.' "

v

Regarded in this way, the conflict does indeed seem to be purely imaginary. Science and religion are independent, though complementary, reactions to the world; great thinkers, as he holds, representing "the aristocracy of the intellect," religious geniuses "the aristocracy of human emotions." But a somewhat closer analysis reveals the fact that the position must be taken with a proviso, the proviso that religion be limited to pure feeling. Religion and science are not incommensurable after all. Religious feeling, Mr. Thomson explains, is usually associated with belief, and to some extent, though fortunately "to a continually decreasing extent, these beliefs touch the world of the concrete, and a clashing with science must arise whenever and wherever the form of the religious belief is inconsistent with the results of science." Consequently there have been repeated clashes between the two because religious emotion had associated itself with concrete beliefs refuted by scientifically established facts. As a result of these clashes "the particular 'body' which a religious idea takes, has been more and more sublimed."

Very naturally; and "sublimed" is just the right word, rich in emotional quality and free from specific meaning. How much harsher such words as submerged, dissipated, or evaporated, would have been. Harsher, but perhaps more accurate. For what is the "body" of an idea but its meaning, its concrete references? And what is it to "sublime" this meaning but to evaporate or dissipate it? Mr. Thomson remarks that in most cases where the body of an idea has been sublimed "it has become clearer in the process." This he regards as the service which the so-called conflict between science and religion has done

humanity. But there seems nothing for the word clearness to mean, as thus employed, except rarification into thin air.

For it must be added that Mr. Thompson does not make a well-known compromise; he does not permit the religious idea to nourish its "body" by drawing upon the vast unknown which hems in the small spot illuminated by science. He is too thoroughgoing and honest a scientist to suggest, as many do, that the unknown is incomparably greater than the known, and that there the soul may delight itself in fatness. On the contrary, he quotes with approval the words of Emil Boutroux: "The history of science proves that we have a right to affirm a continuity between what we know and what we do not know." and adds that the scientific enquirer has seen the solution of too many problems which our forefathers called insoluble to adopt transcendental explanations for unexplained events.

VI

The conclusion of the matter would thus appear to be that religious emotion must refrain from formulating itself in terms touching the field of knowledge, actual or possible. And in that case the quotation "a glimpse of incomprehensibles, and thoughts of things which thoughts but tenderly touch," is a pretty phrase and nothing more. Such words as "transcendental," "sublime," "incomprehensibles," and the rest of the familiar vocabulary, have meaning only on the supposition that science is not supreme in the realm of the knowable. The autonomy granted to religion in the present instance is therefore a pseudo-autonomy, involving, as it does, belief in nothing in particular. Religion is assured of supremacy over a large domain providing it refrains from taking the grant seriously and laying claim to actual territory. In the face of this qualification it is difficult to agree that to see in the veto power of science "an antithesis between scientific formulae and the religious idea is a misunderstanding." On the contrary, the conflict remains a very real one, in spite of all denials. . . .

Now there are people who cannot accept this easy way out. They reject it for the reason that it withdraws attention from the greatest spiritual, or shall we say human, task of the times—the redefinition of the higher life in the hope of making it a function of man's effort to deal with the unprecedented social and economic conditions which, even if they are ignored, cannot be escaped. In their view, to stimulate, to inspire, to arouse, are not necessarily good acts. They are good if they aim at specific ends and these ends are good, but not otherwise. Experience has taught them a better psychology; has taught them that feelings reach out for objects as the tendrils of the grape seek the trellis or the hart panteth after the water brook. And so they know that to disregard creed—creed being the net result of thinking (in this case thinking about the higher life) expressed in a succinct statement of beliefs—is to wear one's heart on one's sleeve, a gift to any bold project that happens along, be it an honest enterprise or a clever exploitation. In their eyes sentimental goodness, and aspiration for its own sake, are worse than worthless, because they not only fail to meet the needs but constantly get in the way of the application of thought to the problem of defining the higher life in concrete, workable terms, and the equally important problem of getting the definition to take living form.

The issue is thus not of purely theoretical or logical interest. It is of great practical and social interest. In view of the current desire for intellectual prestige on the part of religion and for moral respectability on the part of science any compromise is likely to make a strong appeal. And in so far as this particular compromise is adopted humanity surrenders two of its most signal achievements in the realm of the spirit. The scientist jeopardizes his dearly bought privilege of searching for the truth regardless of its bearing on human hopes, and the idealist gives up the long struggle to define his aims and to justify his hopes at a time when these are needed as never before. The adjective "higher" in the term "higher life" is made synonymous with obscurer, and the whole subject of ideals becomes a phase of obscurantism. Peace on this

basis is a peace of diplomacy, which merely prepares the way for intenser antagonism.

This appears to bring us once more to a stand. Assuming that our analyses of the various typical solutions of the problem in hand are correct, it would seem that nothing remains but for each side to fight for its claims, by any means available, until one or the other is forced to quit the contest. Before accepting this conclusion let us take a final look. Harmony both theoretical and practical may still be possible if instead of dealing with the problem on the surface we attempt to reach a more basic standpoint. Nothing is gained by decrying science, minimizing the importance of the higher life, or promoting a form of truce between the two which involves the surrender of what is most vital in each. Agreed on that much, we may be able to agree on more.

VIII

What is it men want? They want to live the most livable life. This fact at once gives science a commanding status. The most livable life must be sought and found in the physical environment which conditions our efforts and which, as far as we can see, is indifferent to our success or failure. Lacking acquaintance with this environment we cannot utilize it, and unless we can utilize it we are helpless. Rules of thumb, picked up by untrained observation, can take us some distance, and it is this which has served man from the beginning and still serves him in a thousand ways. Few people, however, even among the critics of science, would be willing to shrink life to dependence upon rules of thumb. They are not only willing to take advantage of the comforts and conveniences which a more refined observation has made possible, but expectantly await the more stupendous exploitations of nature which rumor constantly promises. Nature, then, is to be utilized. But to utilize nature, we must study nature, and scientific method is the best means so far discovered for that task.

But it gives the higher life a commanding status, too. Science, knowing no more of better or worse than nature does, cannot supply us with a program of life. And without that program science may be our undoing. This is

frankly recognized by scientists themselves, or at any rate by the more thoughtful of them. The "results of Natural Science," says E. W. Hobson, in his Gifford Lectures, "in its persistent efforts to dominate physical nature, have furnished us with the mechanical means of securing an indefinite improvement in the welfare of mankind, if a wise use is made of the power with which they endow us. They have also provided our civilization with the material means of committing suicide, if the increased mechanical powers which they afford are not accompanied by a corresponding rise in the ethical standards which actuate nations in their dealings with one another. . . ."

IX

This conviction, that the so-called mastery of nature is in itself inadequate to the needs of life, is bound to become more deep and general as the conditions are appreciated. Indeed it may soon be the one all-absorbing question of the age. We must therefore turn elsewhere for the complement of the great service which science has done and stands ready to do. And we must demand (or we shall fall back into positions already rejected) that this service, though different in important respects, must be of the same substantial kind we are accustomed to look for from science. We may, for example, study man's original impulsive equipment, his desires and habits, the purposes and cross-purposes which are formed out of these in response to physical and social conditions, and thus arrive at a conception of the best manner of individual and social life. Science would then be man's effort to master the facts of nature and to discover the best means for drawing upon nature's resources; and the higher life man's effort to master the problem of human values, or his devotion to the discovery and practice of the most livable life. We might then indeed speak of science and religion, without equivocation or confusion, as inseparable and complementary endeavors in man's attempt to make himself at home on this planet.

Is such an arrangement feasible? Not without a radical change in the prevalent notion of both science and the higher life. Any genuine *rapprochement* implies the emancipation of the mind from the tradition that the one

opens the window to ultimate truth and that the other comes armed with a supernatural warrant. No doubt reasons are forthcoming for holding to these traditional conceptions, but so long as each side clings to a sovereignty fatal to the other there must be discord between the two. A working understanding requires as an initial step a modification of time-honored claims. Without this step, harmony, however much advertised and eulogized, will be word-deep only. In the past this suggestion might properly have seemed hopeless, but there are reasons why it should not appear so now. Recent events have discouraged dogmatism and intolerance in both camps, and in its place there has developed a disposition to make concessions. At the same time the reports of profound changes in scientific conceptions, such as the electromagnetic constitution of matter, the theory of relativity, etc., widely disseminated by newspapers and magazines, and the experience or observation of changing religious conceptions, have prepared the interested public for basic reinterpretations.

It remains to make clear then what this change in attitude concretely demands. And while no change in the habitual outlook on the world could well be more revolutionary, a lengthy exposition is unnecessary to make clear the essentials. The first of these is the recognition that scientific concepts and generalizations are not literal transcripts of reality but highly selective constructs of the human mind; not discoveries in the strict sense, but inventions, products of the creative imagination of men of genius. This fact has been adumbrated in various ways in the history of thought, and from different motives, but in recent times, especially very recent times, it has been clearly stated and defended from the side of science by Hobson, Mach, Ostwald, Pearson, Kirchoff, and men of like caliber. . . .

x

This position is not accepted by all scientists, but it does represent a strong tendency, and it has a future. We need not, however, argue the question of its validity. Our object is merely to see on what view of science a genuine higher life is possible. And it would seem that

it must be some such view as this. For if science is a great conceptual system arrived at by abstracting certain aspects of living experience and neglecting others, a symbolic picture woven into the garment of nature behind which, as Heraclitus said, she ever loves to hide; and if by means of this creation we are able to gain ends that appeal to us; two results follow that are essential to the higher life. One of these is a new freedom, freedom from an attitude toward conclusions in natural science analogous to the medievalist's attitude toward conclusions in scholastic theology. What ground is there for believing a divinity to hedge about a scientist, or for assuming that scientific conclusions, unlike other things human, are free from the taint of imperfection and mortality? It is important to insist upon the indispensableness of untrammelled science, but equally important to insist with Clerk-Maxwell, himself an eminent physicist, that "there are many things in heaven and earth, which, by the selection required for the application of scientific methods, have been excluded from our philosophy" when we envisage the world with the eye of science.

Which brings us to the second thing gained. The conceptual view of science not only leaves the way open for, but positively suggests the necessity of, other conceptual schemes for dealing with other aspects of life. There is no longer any reason why the principles or forms or categories under which the scientist finds it convenient to think, *must* be employed by *every* thinker, no matter what his field or his aim. In our commendable desire to emulate scientific method we have become more and more obsessed with the notion that no matter what mutilations or distortions might be necessary, everything must be studied as we study chemical reactions or falling bodies. Differences in subject matter might increase our difficulties but must not deviate us from this procedure. And this has been a costly error—*how* costly there is no way of telling. We do indeed want disciplined intelligence in every field, but disciplined intelligence is not necessarily identical with the specialized form it has taken in the physical sciences. This step—the clean-cut recognition that facts determine method, not method facts, that science is for life, not life for science—is of the greatest significance. It stresses rather than ignores the importance

of appreciating differences in subject matter in order that the methodological procedure may be adapted to the nature of the problem.

The theory that men are machines may serve as an illustration. The theory is arrived at by abstracting certain aspects of human behavior and letting these symbolize the whole. When this partial view is applied in a circumscribed field not only is there no harm done, but it may prove highly beneficial in various ways; but when, its limitations lost sight of, it becomes the basis of great economic, social and political programs, the damage done is enormous. Unquestionably there are many actions of human beings which are machine-like. There are others which unquestionably are not. It is plain, for instance, that in contrast with other machines man's operations react upon himself and transform the nature of his operations, that is, make him a different machine. The change introduced may be great or small, but it is real, so that in the course of years the sum of the activities which make up a man's daily life may be quite decidedly altered. If we could point to typewriters which had gradually acquired the powers of linotype machines, and had then gone on until they functioned as rotary presses we would have a true similarity. A typewriter, however, might set up the entire *Encyclopedia Britannica* and, except for wear and tear, be the very same machine it was at the beginning. A typist, on the other hand, could not do this if she tried. True machines do not learn, while animals, and especially human animals, invariably do; true machines are the very symbols of uniformity and routine, while human beings are fundamentally antagonistic to doing the same thing over and over in exactly the same way. We can and do compel an approximation to machine-like behavior, but it goes against the grain, works only temporarily, and periodically leads to violent eruptions. It is difficult to see how this difference—a difference profound enough to be the chief cause of man's supremacy on the globe—can logically be disregarded.

This consideration is enforced by a second. Man evaluates or criticizes his experiences and processes, and he regrets, hopes, fears, craves, lays plans in consequence. Obviously, mechanical contrivances do nothing of the kind. A Ford does not aspire to be a Cadillac; an ocean

liner may tower above a tug but does not look down upon it. Where, outside of Kipling, do freight cars pine to be in Kansas when the sunflowers bloom?

To be sure, no one supposes such things, but it is well to fasten our attention upon this difference between true machines and human machines long enough to guard against being imposed upon by a common manner of speech. Even in the animal kingdom we get hints of a kind of selective adjustment to the environment which differs from the wearing down adjustment of pure machines. And what is present in animal behavior in a very rudimentary form is highly developed in human behavior. Men consciously select certain aspects of their environment and act with deliberate reference to these aspects. They pass judgments of value upon themselves, other men, and things, and with these as guides, form plans of action aiming at the realization of particular goods and the avoidance of particular evils; plans which may be simple, and near in their attainment, or as comprehensive and far off as a philosophy of life.

xi

A promising alternative is opened out when the changed attitude referred to has become a living thing. Instead of quietly ignoring these features of human behavior or going to any length of twisting and warping to force them into the conceptual scheme adapted to the behavior of atoms and molecules, we may develop other conceptual schemes more hospitable to the facts, and so doing, may give a new purpose and consequence to the study of these processes. We put ourselves in the way of gaining ends to be reached neither by blind adherence to nor blind rejection of the highest specialization of human intelligence which science undoubtedly is.

At the same time the man in whom this change has become a living fact will find it impossible to reduce the higher life to conventional religion or to some form of trance induced by sitting on a peak of mystical abstraction gazing into the face of a oneness that is everything though nothing. He will rather identify it with active concern for the most livable, joyous common life; with *dedication to the human venture*. He will not look upon the

life of the spirit as a matter of revelation or immediate intuition delivered once for all to certain holy or wise men, and then forever striven after, but a life progressively discovered and progressively achieved by dedicated souls. He will endeavor to employ in his own way the disciplined intelligence best exemplified by the scientist; that is, he will try to conform to what may be termed the moral attributes of the scientific attitude; loyalty to fact, insistence upon rigorous, non-subjective standards of evidence, faith in the unbounded possibilities of coöperative achievement. In that high sense he will be scientific. And he will agree with William James, that what most men need "is that their faiths should be broken up and ventilated, that the northwest wind of science should get into them and blow their sickliness and barbarism away." But he will not make reality as pictured by natural science the model for human life. He will not reduce to nothingness the attributes which in the course of evolution have distinguished man from the animals, nor will he aim to submit human destiny to the blinder processes of his own nature. He will free life where he can from the sodden routine, the meaningless rush and scramble and defeat to which machine philosophy has already degraded it. He will set his face against the conception of life where every knee shall bow and every tongue confess the Great God Hum. Below all theories and creeds and faiths he will hold to the conviction that neither science nor religion nor art nor commerce nor any of the specialized forms of human activity is the end of man's endeavor, but a satisfying life for all who may have a life to live.

Conclusion: Shall We Quit, or See It Through?*

I

In this emergency, so stupendous and so profound, every one of us faces a supreme option. Shall he try to step aside from the struggle, or shall he stay in it and see it through? These are the alternatives which no one in our time can avoid. There is no neutral ground between them. Indecisions of indifference or timidity, or the calculating indecision which is the hope to gain whoever wins or loses, are all of them decisions—decisions to step aside.

It is understandable why just now stepping aside should appear attractive. Seemingly irresistible forces are sweeping through the world, blind to the havoc they leave in their wake. What more natural than to get out of their way rather than meet them head on? Moreover, some natures are made to "seek peace, and pursue it." Not only weaklings and cowards, but men and women of high character and strong purpose may find the present world too much to cope with. It would be unimaginative and inhuman to add our blame to the burden of misery they already carry.

Let us forget such persons for the moment, all who give up the battle openly, either because that is what they want to do or because they cannot help themselves; forget them although their deflection makes it a more uphill fight for those who stay in it. But there are moods of detachment from the turmoil of a different sort, different in their causes and in their bearing on our common life. To these we must give attention.

II

Some years ago a Boston author wrote an eloquent book called *Pro Vita Monastica: An Essay in Defense of*

* From *The Christian Century*, January 11, 1939. Copyright, 1939, *The Christian Century*.

the Contemplative Virtues. He urged his readers to retire from the prevailing chaos into solitude for periods as long as they could make them: into an upper room with music, into a hidden garden with flowers, into the realm of good books or the haven of true religion. "Let lonely souls go off by themselves," he advised, "and let them feel that out of solitude may come a light that shall help many along the way."

Along what way? Along the way of spiritual purification. Let the spiritually unenlightened contend for prizes in the arena of affairs as they will. The prizes are empty, the struggle is meaningless. There is one good only—a soul pure and undefiled, a spiritual life "unspotted from the world"; and there is only one way, things being as they are, to attain this good. It is detachment from ordinary life-aims.

Ears were ready to hear this message when the calamities that have since come upon us were still in the making. Their numbers are greater today. Many are saying and many are believing that the final words of Mr. Sedgwick's book set before us the last hope of saving the best in mankind:

The sun has set, the moon no longer shines, no stars twinkle in the sky;

We must light our candles, or we shall be in utter darkness.

III

Not all plans of escape from life are obviously such. Some, because of their advertised pretensions, deceive many into believing that they are positive forces in social elevation, although they are not, and are not designed to be. Take the intellectualistic programs of men of letters, academic critics of life, philosophers. Who among us can write more biting denunciations of things as they are than our brilliant company of "intellectuals"? Who is more keen to point out imperfections in changes made to improve conditions?

But do these "men of learning" stand up to the realities with which plain men and women have to grapple if they are to make anything at all of their existence? Of course they do not. They turn in disgust from anything so

earthy. They prefer to live as exclusively as they can in the purer world of ideas. In that retreat they can imagine conditions to their heart's desire and solve life's problems by leaving them to others. Our intellectualists are not concerned to make life more palatable all around. They want it to be exciting for themselves and their kind.

Meantime they drop in periodically for a bite to eat, find fault with some item on the menu, suggest a dish which cannot be prepared, and go off with a choice basket of food and drink.

IV

Men step out of the rough and tumble of life to protect the purity of their souls, the purity of their intellects, and for at least one other reason—to protect the purity of their ethical principles. Ethical philosophy is inherently bent on its own refinement and perpetuation, and so tends to become an ideology, and thus a retreat, instead of a working program. Have not the moral leaders of mankind invariably had to break with developed ethical tradition that they might bring moral idealism back into vital touch with the upreaching impulses of men?

Can anyone doubt that this is true today? One look at the world as it is and is shaping itself to be, at the political, economic and social antagonisms fighting it out among themselves, and at the heroic men and women active in the midst of this strife on behalf of a *civilized* future—one look at the world in this aspect makes it clear how far our ethical philosophizing and our ethical discussions in schools and colleges have detached themselves from moral issues in their vital form. They are carried on in a world of their own, often a noble and beautiful world, but one that is far removed from the aims and activities out of which a living moral purpose must fashion the best attainable good life of daily practice.

We can take no joy in saying it, but we must say it to ourselves until we have taken it to heart, that even our ethical interest has for many of us become a way of stepping out of the actualities of social conflict in order to keep our sense of goodness uncontaminated, and our ideals of justice, truth, righteousness pure and undefiled.

This, then, is what some of us have chosen and are determined to serve—a precious quality of inner personality which can be perfected only in detachment from the sordid world. And just now, as the danger of this inner quality increases, we hope to protect ourselves by moving out of the area of strife. We labor to establish spiritual and educational oases shut off from the advancing desert, where the living springs of the higher life shall continue to flow, that those who thirst may come and drink.

Yes, some of us hope to save what we prize by stepping aside from the struggle. And some of us, actuated by a similar hope, are determined to stay in the struggle and see it through; through to the bitter end, if it must be bitter, but at any rate, through to the end. We choose to stay in the struggle not because we minimize the importance of what is named the spiritual life, or intellectual development, or moral character. We value the life of the spirit. We put a high estimate upon the function of intelligence. We believe in worthy standards of conduct. And we intend that the quest for these shall be an organized quest. But we are skeptical of all individual or organized effort that is actuated by a spirit of exclusiveness. We refuse to forget the teeming world beyond the walls set up by spiritual, intellectual or ethical pride. We are convinced that a people divided against itself—half barbarian and half civilized—cannot stand.

v

There is just now a weightier reason for remaining in the battle than our preference. We *must*, or the higher interests of life are doomed. There have been times when the happy unfoldment of the human venture did not need the concentrated effort of everyone whose interest it is. But ours are critical days. Our path lies close to the precipice. We must watch our steps or we shall go over, as high-minded people have done in other parts of the world.

Twenty years ago hardly anyone detected the advancing front of barbarism. When the world was told from Italy that the road of progress "lies over the more or less decomposed corpse of the Goddess of Liberty," we thought it a deplorable incident. Then the burning of

the books in Germany seemed another deplorable incident. Even those nearer the scene were deceived. The incidents multiplied and spread. They occurred in Spain, in Japan, in Austria, in Czechoslovakia. And when at last people awoke to the significance of these outbreaks, what did they do? They undertook to save the civilizing elements of life that still remained by walling them off from the encroaching enemy.

Did they succeed? Alas, they did not. There was no place to make a stand. The ground under their feet had dissolved away.

What had dissolved it away? Physical want, physical misery, physical dread had dissolved it away. For if we look below the surface we will not be satisfied with the theory that a few powerful, brutal, perhaps insane leaders were responsible for what happened. Nor will we discover the explanation in an eruption of the savagery in man which is always there below the skin of civilization. We will see that the underlying cause was the failure of the economic machinery to feed, clothe and employ people. We will understand why it was that young men and women, unable to find work and compelled to give up all thought of a career, saw in the nationalistic programs which seem so dreadful to us an appealing opportunity to gain a livelihood and to participate in a vast community venture.

VI

The supreme option before us is to step aside from the struggle or to stay in it and see it through. Now if we reject the noble-sounding schemes of detachment and disinterestedness which are offered to us, if it is our choice to remain active in the human race, there is one thing above all others for us to do. It is to work openly and deliberately for an economic and social order which will at least provide for men's physical needs; an economic and social order in which the young may hope at least to make a living. Obviously our present arrangement fails to do this and fails glaringly. It cannot fail much longer without bringing the kind of disaster upon us which similar failure brought elsewhere. There is something authentic in the outburst of Abram in the play, *Squaring the Circle*.

He is sick of theorizing, and shouts: "What I want is a large hunk of bread and a gigantic chunk of meat. I want a colossal omelette made of at least six eggs. I want calories, I want vitamins A to Z—and I want cucumbers. . . . Let me announce it quite categorically and without equivocation: I want to stuff myself."

Not a very adequate ideal? No; of course not. But the point is, and we may depend upon it, that jobless, homeless, hungry men will act out their jobless, homeless, hungry condition. Nothing will in the end stop them. They will not be restrained by regard for "spiritual values," "dictates of reason," "ethical verities," "democratic institutions," or anything of the kind. They will not listen to excuses or wait for long-time plans to work out. They cannot wait forever.

If men are left with no choice but physical starvation in the midst of spiritual plenty, or the hope of physical survival amid spiritual poverty, the vast majority will choose to survive. And it is what this great multitude of average men and women does which will determine the outcome for us all. If *they* are deprived of the hope of betterment, then before we know that it has happened, the primary need to live *somewhat*, will have swept us, as it did others, beyond the possibility of deciding what we want to live for.

vii

So we are pushed into politics and political action. I do not mean, of course, that each of us is to run for political office, but I do mean that we are all called to help in deciding what kind of public service we shall have, and under what kind of political institutions we shall live. Politics, we are accustomed to say, is dirty. A good deal of the dirt in politics, I think, is clean dirt; much dirtier dirt can be found where there is supposed to be none at all. But I shall not stop to argue the matter. There is simply no escape.

The political institutions we inherited were meant to restrain lawless encroachment upon opportunity when opportunity was thought to be, indeed was, unlimited. The present need is for instrumentalities to make good deficiencies in opportunity. And that involves political ac-

tivity. To insist upon keeping antiquated social institutions in operation when new institutions are needed will not prevent new situations from coming. It will prevent them from being intelligently designed. They will come through acts of desperation and violence. Unless enough Americans are willing to invest their idealism in the project of remaking our social order into a positive means for utilizing our resources for the common good, it will not be long before there will be no idealism to invest.

Is this to say that lowborn ideals must come before highborn ideals? That depends upon how we conclude to describe them. If ideals are lowborn because they have their source in ordinary needs, then it is lowborn ideals we must seek to realize first. In this strange world of ours, with its potential abundance of consumable goods and its staggering load of unemployment and want, there is an obligation which cannot be pushed aside without bringing tragic results upon the whole human venture. The spirit of man is hard pressed by outer circumstances today as perhaps never in history. We must find our way to a method of social housekeeping that will make both ends meet or we shall witness a still further decline in valiant aspiration. The situation is not hopeless unless those who are concerned for the higher interests of life think it beneath their dignity to take off their coats and roll up their sleeves. If we lose, it will be by default.

EMERSON: The Basic Writings of America's Sage

Edited by Eduard C. Lindeman

In his selection of these essays, Eduard C. Lindeman has reinterpreted Emerson for our time. As Professor Lindeman says: "Whenever sensitive people are concerned about issues of value they will instinctively turn to Emerson, and ours is such an age. I want readers who have never enjoyed Emerson to discover how much he has to say to our generation. . . . His battle against hypocrisy, superstition and mediocrity is our battle still. His claims for truth and honesty and justice are our present responsibilities . . ."

A MENTOR BOOK—35c

